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BIS OCCASIONAL PAPER NO. 1

Research to improve the assessment of additionality

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Preface

This study was commissioned by the Department for Business, Innovation and Skills. The study team from Cambridge Economic Associates was directed by Professor Peter Tyler and managed by Colin Warnock with additional work from Angela Brennan.

The work was guided by a steering committee that comprised Amy Newland, Angelique Botella, Georgina Mills and Edith Ryan from the Department for Business, Innovation and Skills, Edward Palmer from Communities and Local Government, Joseph Lowe from HM Treasury, Simon Dancer and Jo Brotherhood (Homes and Communities Agency), Paul Mooney (One North East), Ivan Perkovic (SEEDA), Karl Johnston (Scottish Enterprise) and Mike Chadwick (Sheffield Hallam University).

Executive summary

Background

X1. In October 2008 the Department for Business, Innovation and Skills (BIS, formerly the Department for Business, Enterprise and Regulatory Reform) commissioned Cambridge Economic Associates (CEA) to undertake an assignment which would capture additional evaluation evidence on additionality as well as explore the latest thinking on particular areas of the adjustment, most notably agglomeration economies and their relevance for the multiplier adjustment. The research was directed by Professor Peter Tyler and managed by Colin Warnock.

X2. The study has been designed to collate and analyse new evidence gathered on additionality in recent years, particularly as a result of the independent assessment of the impact of the spending of the nine English RDAs (PricewaterhouseCoopers, 2009). The RDA evidence has the great advantage that it has been derived from evaluations that have sought to define deadweight, leakage and additionality in a consistent and transparent fashion, underpinned by the Impact Evaluation Framework (IEF) produced for BERR in 2006 (DTI, 2006). Throughout this Report key terms are defined according to the definitions used in the IEF.

X3. The Report is aimed at those who commission, conduct and use evaluations to inform and design policy. It is particularly targeted at evaluation managers in public sector departments and agencies who commission economic development or regeneration evaluation work as well as those undertaking evaluation research in these fields. It will be of use to those who undertake appraisals. The absence of additionality "benchmarks", with which to compare and contrast results emerging from evaluations, has long been a major hindrance to the evaluation community. This study has been designed to provide a substantially larger database of benchmarks covering a wide range of economic development and regeneration themes.

X4. The work has captured additionality data from over 280 evaluations covering a range of economic development and regeneration interventions across the UK. The approach to identifying relevant evaluations and assessing their suitability is set out in section 2 which also explains the different types of data sources used.

X5. Data was captured on deadweight, leakage, displacement, substitution and multiplier effects. Where sufficient data existed, a net additionality ratio was also calculated on a consistent basis. Results have been captured at two spatial levels: the sub-regional level and the regional level.

X6. The study also captured data on key project characteristics allowing the additionality data to be disaggregated according to: the themes and sub-themes used by the recent RDA Impact Evaluation; whether the intervention was a programme or project; and the rationale for intervention. The study had hoped to disaggregate the data in other ways, but found too little consistency in the

presentation of other key contextual variables (e.g. the size of the intervention) in evaluation reports or databases for that to be possible.

X7. Although the data on deadweight can be readily applied to all types of output, including housing outputs, the data on leakage, displacement, substitution and multiplier effects cannot be so readily applied to physical outputs. This data will be of greatest use to those involved in programmes and projects targeted at employment and skills.

X8. In addition to the data capture and analysis work described above, the study also undertook a review of the literature relating to agglomeration economies to assess the scope for incorporating this factor into the calculation of additionality. This review is presented in Annex A.

Main results

X9. Overall, across all intervention types, the mean net additionality ratio at the *sub-regional* level was estimated at 45.8% with a median of 47% (Table X1). The results in Sections 3 to 7 of the main report show the relative importance of the individual additionality parameters in the overall net additionality result. At the sub-regional level, deadweight is clearly the crucial variable (39.5% across all interventions), but displacement (21.5%) and leakage (15.8%) play an important role. The multiplier effect is also important, even at this spatial level (25%/1.25). On average substitution plays a very modest role in the calculation (2.7%), though of course its importance will vary depending on the theme or sub-theme in question.

Table X1. Summary of additionality estimates at the sub-regional level

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
Deadweight	148	0.0	97.5	39.5	38.5	5.0
Displacement	158	0.0	80.0	21.5	12.0	3.6
Leakage	51	0.0	90.0	15.8	6.0	6.9
Substitution	37	0.0	100.0	2.7	0.0	5.4
Multiplier (not % in columns 2-5)	137	1.00	2.71	1.25	1.21	3.9
Net additionality ratio	74	0.0	152.9	45.8	47.0	6.8

X10. Table X2 presents the data at the sub-regional level disaggregated by theme. The evidence shows that the mean net additionality ratio was lowest under the business development and competitiveness theme at 35.9%. The value was around 54% for both regeneration through physical infrastructure and people and skills. The ratio was greater for programmes rather than projects at the sub-regional level (57.1% compared to 27.1%). Disaggregation according to rationale and dominant market failure was constrained by the number of observations at this spatial level.

Table X2. Additionality by primary theme, means at the sub-regional level

Themes	Deadweight	Displacement	Leakage	Substitution	Multipliers	Gross to net ratios
Business development & competitiveness	47.2	19.5	16.3	2.7	1.25	35.9
Regeneration through physical infrastructure	7.5	38.7	14.1	–	1.33	54.2
People and skills	26.3	17.9	13.5	–	1.66	54.0

Shaded areas denote results from less than 10 observations

X11. Table X3 summarises the additionality estimates at the regional level. Across all intervention types the overall mean net additionality ratio was 50.3% and the median was 48.8%. At the regional level, deadweight is still important (43% across all interventions), but the displacement (29.6%) and multiplier (1.45) effects are more dominant and the leakage effect (11.3%) less important. Again, substitution is a relatively minor contributor to additionality for most interventions.

Table X3. Summary of additionality estimates at the regional level

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/-at 95% Conf Level
Deadweight	363	0.0	98.0	43.0	43.0	2.6
Displacement	367	0.0	100.0	29.6	25.0	2.7
Leakage	233	0.0	87.0	11.3	5.0	2.1
Substitution	192	0.0	87.5	3.4	0.0	2.2
Multiplier (not % in columns 2-5)	326	1.00	3.25	1.45	1.43	3.1
Net additionality ratio	226	0.0	189.0	50.3	48.8	3.8

X12. Table X4 shows that there was less variation in net additionality by theme at the regional level than there was at the sub-regional level, ranging from 49.7-55.1%. There is far more variation by sub-theme (not shown). Regional net additionality is higher for programmes (54.8%) than projects (43.8%). It is also higher for interventions founded entirely on an equity rationale (57.8%) than those on purely a market failure/efficiency rationale (52.1%). Taking those dominant market failures with more than 10 observations, it was highest (52.6%) for interventions tackling an imperfect information market failure.

Table X4. Additionality by primary theme, means at the regional level

Themes	Deadweight	Displacement	Leakage	Substitution	Multipliers	Gross to net ratios
Business development & competitiveness	45.5	29.3	11.5	3.4	1.51	49.7
Regeneration through physical infrastructure	33.9	37.4	10.4	2.2	1.40	50.8
People and skills	39.4	24.7	14.2	4.4	1.36	55.1

X13. The evidence presented in this Report can be used to help check the reliability of key evaluation parameters provided in appraisal and final evaluation work. The objective is not to suggest that any particular result produced in appraisal and evaluation work is necessarily wrong but rather to assist the process whereby estimates are checked for their plausibility.

Looking ahead

X14. Section 9 of the main report considers actions that could be taken to strengthen the evidence base going forward. Further refinements could be made to the measurement of additionality components through the use of standardised definitions across the UK and this would provide a consistent basis for evaluation design. Greater consistency could also be supported with the development of practical guidance and tools, for example on questionnaire design and survey methods.

X15. Looking ahead, there is also an opportunity to define a standard suite of explanatory variables and a template for the presentation of key evaluation results. This would significantly improve the potential for additionality benchmarking in the future. For example, with this information in place it would also be possible to undertake some formal statistical modelling of the additionality database to support the development of ready reckoners for economic development and regeneration practitioners.

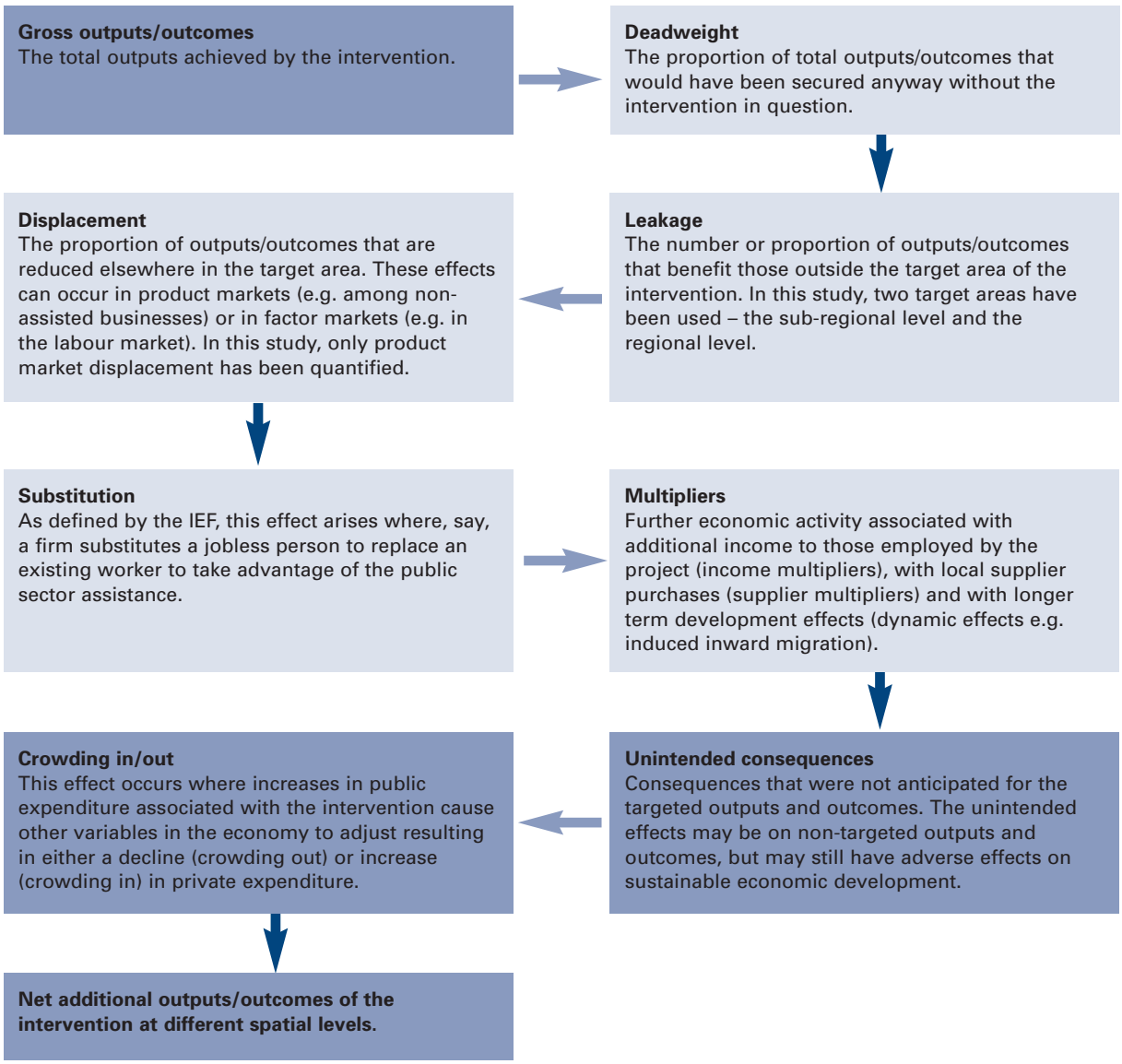
X16. Finally, the subject of value for money (VFM) was beyond the scope of this study. In principle, there will not be a simple relationship between additionality and VFM. For example, a project with high returns but low additionality may have better overall VFM than a project with low returns and high additionality. A natural extension of additionality research in the future would be to gather data on costs and benefits which, alongside data on additionality, could enhance practitioners' ability to benchmark the different dimensions of VFM (economy, effectiveness and cost-effectiveness/efficiency) for their interventions. As with the explanatory variables above, this could be supported by greater consistency in the way that key evaluation data are presented.

1. Introduction

Context

1.1 The assessment of additionality, both in economic appraisal and evaluation, is crucial to understanding the net impact of Government interventions. Evaluation evidence, in particular, is especially helpful in helping to test and calibrate appraisal assumptions on the different components of the additionality adjustment. The Additionality Guide[1] prepared by the Homes and Communities Agency's predecessor, English Partnerships, and BIS's RDA Impact Evaluation Framework both provide a helpful introduction to the main components of additionality adjustment which are brought together in Figure 1.1 below. This study has been concerned to gather and analyse evidence for the parameters that are shaded.

Figure 1.1: Additionality adjustments



1 English Partnerships (2008): Additionality Guide: A standard guide to assessing the additional impact of interventions, Method Statement, Third Edition

1.2 The wide-ranging evaluation of the Regional Development Agencies' impact in 2008 provided a rare opportunity to update earlier evidence – embodied in the most recent Additionality Guide prepared by the English Partnerships – and to extend the breadth of evidence to cover a wider range of intervention types.

Study objectives, approach and method

1.3 In October 2008 the Department for Business, Innovation and Skills (BIS, formerly the Department for Business, Enterprise and Regulatory Reform) commissioned Cambridge Economic Associates (CEA) to undertake an assignment which would capture additional evaluation evidence on additionality as well as explore the latest thinking on particular areas of the adjustment, most notably agglomeration economies and their relevance for the multiplier adjustment. The research was directed by Professor Peter Tyler and managed by Colin Warnock.

1.4 The report is aimed at evaluation managers in public sector departments and agencies commissioning economic development or regeneration evaluation work, those who use evaluation results to inform policy, programme and project design, and those who conduct evaluation research. It is designed to enable them to compare and contrast the findings that emerge from evaluations that they commission or oversee and thus be able to 'benchmark' their findings. The ability to do this in a systematic and comprehensive way has long been an objective of those involved in commissioning and producing evaluation guidance and it is hoped that this study provides a valuable first step.

1.5 The work has captured additionality data from over 280 evaluations covering a range of economic development and regeneration interventions across the UK. The approach to identifying relevant evaluations and assessing their suitability is set out in section 2.

1.6 Data was captured, without any re-calculation, on deadweight, leakage, displacement, substitution and multiplier effects. Where sufficient data existed, a net additionality ratio was then calculated by CEA on a consistent basis.[2]

1.7 In order to aid those wishing to use the data to inform appraisal assumptions or to benchmark other evaluation data, the study also captured data on key project characteristics relating to theme/sub-theme, whether the intervention was a programme or project and the rationale for intervention. Data has been disaggregated by these characteristics and information provided on the margin of error at the 95% confidence interval. Unfortunately it was not possible to capture consistent data on the scale of public sector support, which is likely to be an important influence of additionality.

2 See Section 2 for detail.

1.8 In addition to the data capture and analysis work described above, the study also undertook a review of the literature relating to agglomeration economies to assess the scope for incorporating this factor into the calculation of additionality. This review is presented in Annex A.

Report structure

1.9 Section 2 of the report sets out the approach and method used to search for and select candidate evaluations from which additionality evidence was collated and analysed. Sections 3 to 8 of the report then take each of the key additionality adjustments in turn. Each section begins with a definition of the adjustment and some commentary is then provided on how the nature of the adjustment appears to vary by intervention characteristic. Section 9 concludes with reflections on the key issues encountered during the study and some recommendations for strengthening the evidence base going forward.

1.10 Four annexes provide further detail. Annex A reviews the issue of agglomeration economies and its relevance for the analysis of multiplier effects. Annex B presents summary tables of results. Annex C shows, through three worked examples, how the results can be applied. Finally, Annex D provides a glossary of key terms.

Interpreting the results

1.11 As indicated at Figure 1.1, data has been analysed for five main components of additionality: deadweight, leakage, displacement, substitution and multipliers. Although the data on deadweight can be readily applied to all types of output, including housing outputs, the data on leakage, displacement, substitution and multiplier effects cannot be so readily applied to physical outputs. This data will be of greatest use to those involved in programmes and projects targeted at employment and skills.

1.12 Results have been captured at two spatial levels: the sub-regional level and the regional level.

1.13 Data have been disaggregated by three principal characteristics – theme/sub-theme; whether the intervention was a project or programme; and the rationale for intervention. The themes are defined in section 2. Some interventions were classified to multiple themes, and thus the overall number of observations is higher than the number of evaluations. Sections 2 and 9 explain why the study was unable to disaggregate the results by other characteristics, such as scale of intervention.

1.14 Data has been disaggregated by the three principal characteristics above. The rows in the table are shaded to indicate where there are less than 10 observations. This is merely to highlight those cells where there was more or less data available for analysis. As we note below, further information is provided on the statistical reliability of the results.

1.15 The data tables in each section provide the following information for the sample of interventions considered:

- The number of data observations for that part of the analysis;
- The low end of the range of the observations captured;
- The upper end of the range of observations captured;
- The mean;
- The median;
- The 95% confidence interval.[3] This figure, which is indicated as plus or minus a given percentage, gives an indication of the spread of the observations and can be interpreted as follows: 95 per cent of results are expected to fall within + or – X% of the stated mean. We recommend that evaluation results be compared with the mean value and the range provided by the 95% confidence level. The median value is also of use as a central tendency measure and is less affected by outliers.

3 This interval gives an indication of the spread of results. This differs in interpretation to a confidence interval usually reported in a statistical sense, which gives an indication of the error associated with an estimate (for example the mean) as a result of estimating it from a sample rather than a census.

2. Approach and method

Introduction

2.1 This section describes the process used to identify economic development and regeneration evaluations containing additionality data, the scope of the data capture exercise that was undertaken and how the data was stored and manipulated.

Identifying a relevant population of evaluations

2.2 As the focus of the exercise was on the evaluation of economic development and regeneration interventions, it was agreed that we should review evaluations commissioned or held by the following Government departments or agencies:

- Department for Business, Innovation and Skills (BIS, formerly Department for Business, Enterprise and Regulatory Reform)
- Communities and Local Government (CLG)
- the nine Regional Development Agencies in England
- Scottish Enterprise
- Office of Project and Programme Advice and Training (OffPAT).

2.3 In addition to these sources we held discussions with officials in the Welsh Assembly Government and in Government departments in Northern Ireland, but no evaluation reports were made available from these sources within the study timescale.

2.4 Our primary focus was on evaluations which reported during or after 2000, but where we were aware of evaluations that were published prior to 2000 that were known to contain useful additionality data, these were included. This included the evaluations quoted in the fourth edition of the English Partnerships Additionality Guide.

2.5 We focused on final evaluations, rather than mid-term/interim evaluations or project or programme reviews. Given the significant population of evaluations from which to sample, we concluded that efforts would be best deployed on those final evaluations where there was a greater chance of additionality adjustments that drew on primary data.

2.6 Figure 2.1 summarises the total number of evaluations which met these two search criteria and which were then reviewed in more detail for the sampling frame. **Around 650 evaluation reports emerged from this initial search.**

Figure 2.1: Evaluation search results by client or main repository*

Evaluations commissioned (* or held by)	Total evaluations meeting initial search criteria	Comments on source of information
BIS	57[4]	Synthesis of BIS Evaluations – data spreadsheet provided by BIS[5]
CLG	11	CEA search of CLG website plus EU Structural Funds evaluations
RDAs	274	Database prepared by PwC as part of National Impact Evaluation for BIS
Scottish Enterprise*	263	Reports downloaded from Scottish Enterprises' Evaluations Online portal
OffPAT*	44	Reports downloaded from OffPAT's E-Library portal
Total evaluations	**649**	

** The Scottish Enterprise and OffPAT sources are repositories of evaluations; Scottish Enterprise is not the commissioning body in every case; OffPAT is not the commissioning body at all.*

Identifying candidate evaluations for data capture

2.7 Having identified a relevant population of evaluations that were likely to generate useful additionality evidence, we undertook a brief review of all 649 evaluations to assess their suitability for inclusion in the study's additionality database. The following data was captured into the study database:

- year report completed
- commissioning organisation
- whether it is a programme or a project evaluation
- the number of discrete additionality observations contained in the report (e.g. a report covering four projects may have four separate sets of additionality adjustments which can be captured)
- theme and sub-theme of activity being evaluated
- the scale of public sector investment in the activity being evaluated
- whether or not the evaluation report contained quantitative estimates of the each of the key additionality parameters of deadweight, leakage, displacement, substitution and multipliers.

2.8 The classification of suitability for this study was based on whether there was clear, quantitative data on each of the main components of additionality. Although the initial population of 649 evaluations was focused on final evaluations, it still included many process evaluations or project or programme reviews. The fact that these reports were not included in the study is not a reflection of their quality – merely that they were not of a quantitative nature.

2.9 For the non-BIS evaluations we scored each evaluation on a range of 0 to 5 based on the incidence of specific additionality estimates presented in the report. We gave cases with very little or no additionality information a low score

4 The 57 reports here are post 2000 reports only. They comprise 24 robust and 33 non robust.
5 The spreadsheet excludes evaluations of interventions for which responsibility transferred to DIUS and it also excludes evaluations of UKTI interventions.

of zero. Those with a score of five contained separate estimates of all of the main additionality adjustments. We then categorised the evaluations with evaluation data into a high, medium and low classification. Those with a medium or high classification were included in the data capture exercise.

2.10 Much of the BIS evaluation data was drawn from an evaluation synthesis study and this included an assessment of overall robustness made by the authors of the report, SQW. This assessment of robustness, alongside our own assessment of the availability of additionality data for analysis, was taken into account in determining which evaluations should be included in the data capture exercise.

2.11 Having sifted the evaluations in this way, a total of 286 quantitative evaluations were included in the study database as shown in Figure 2.2 below.

Figure 2.2: Quantitative evaluations included in the data capture exercise by client or main repository*

Source	Number of evaluations
BIS	39
CLG	8
RDAs	179
Scottish Enterprise*	54
OffPAT*	6
Total evaluations	**286**

** The Scottish Enterprise and OffPAT sources are repositories of evaluations; Scottish Enterprise is not the commissioning body in every case; OffPAT is not the commissioning body at all.*

2.12 These evaluations were associated with 511 "sets" of additionality observations. For example, a programme evaluation might occasionally present different additionality estimates for each of the component projects, or for different themes of intervention, or present high and low ranges on different parameters. Where this disaggregation was clear and provided a discrete set of additionality observations, it has been given a separate row in the additionality database.

Data capture process

DATA SOURCES AND DATA CAPTURE METHOD

2.13 The RDA and BIS evaluation data was provided to us in spreadsheet format, having already been extracted from individual evaluation reports by consultants PwC and SQW respectively. We undertook original data capture work on the remaining 67 evaluations from the original evaluation reports.

2.14 Originally the study had been specified on the basis of capturing data from 100 evaluation reports by reading each report, identifying the relevant data and inputting this into a new database. The immediate and ready access to 218 sets

of additionality estimates via the RDA and BIS databases added substantially to the number of observations and allowed the breadth of the work to be expanded. It was agreed with the study Steering Group that we would augment these data with data from 67 other evaluation reports which we would need to review from source.

2.15 It was acknowledged that by expanding the study in this way we would need to take the imported database estimates at face value and that this approach is not entirely risk free. Although the additionality concepts are well known, and the RDA evaluations were undertaken to a common evaluation framework, at least three organisations were responsible for assembling the additionality data used in this study's database (PwC for the RDA evaluations, SQW for the BIS evaluations and CEA for the remainder). However, on balance, the study Steering Group agreed that the benefits of having a larger database – particularly to allow more disaggregation by, for example, theme and sub-theme – outweighed the potential risks of importing the data in this way.

Data capture framework

2.16 The data capture framework had two main dimensions:

- data for each of the components of additionality;
- data on the characteristics of the interventions that had been evaluated.

2.17 The objective was to capture information on both dimensions to be able to "disaggregate" the additionality data according to the different types of intervention. The more disaggregated the information, the more useful it is likely to be for appraisal and evaluation practitioners when comparing the results with the performance of their interventions.

Additionality data

2.18 At the heart of the data capture exercise were the additionality estimates themselves, comprising adjustment parameters for deadweight, leakage, displacement, substitution and multipliers. These adjustments are defined in more detail, and their data presented, in the tables in Sections 3 to 7. Data were captured at the sub-regional level (which in practice is likely to cover a variety of spatial scales, from the very local (e.g. 5 miles), through the local authority district (roughly 10 mile radius) to the truly sub-regional), as well as the regional level.

2.19 We did not encounter many difficulties with this aspect of the data capture exercise. Our reliance on the various databases made this aspect of the work relatively straightforward, but the consequence was that for the most part we were unable to drill into the data to understand how it had been constructed and whether a consistent approach had been taken. As we note in Section 9, our strong impression – from this study and our own evaluation experience more generally – is that there remain some issues of definition, data gathering and analysis which would benefit from clearer and more practical guidance.

2.20 The main areas of weakness are:

- **There were not many leakage estimates at the sub-regional level** where leakage estimates will be of greater significance in the additionality calculation.
- **As expected, there was no new multiplier evidence:** the estimates principally draw on EP Additionality Guide or Scottish Input/Output Tables. As a consequence, much of the data was "recycled". Practitioners should be aware that by analysing it further for this study the resulting averages may well be less useful than the evaluation data quoted in the Additionality Guide or from data in the Scottish Input-Output Tables.
- **There was a lack of clarity about the project/programme benefits (outputs) for which additionality was calculated.** Some evaluations provided additionality estimates for each main type of output (e.g. land reclamation outputs, skills outputs, employment outputs, GVA). However, most, including the large number of evaluations contained on the RDA evaluation database, were a single figure. The vast majority of evaluations quoting additionality relating to GVA were felt likely, following discussion with the Steering Group, to have derived GVA from employment and thus to have derived their additionality estimates with reference to employment. As a result, we shown a single estimate for each additionality parameter at each spatial level and we note that in the majority of cases this is likely to relate to employment outputs.

Intervention characteristics

2.21 The characteristics of the intervention are likely to influence the level of additionality. Other things being equal, our experience suggests we might expect to see variations in additionality according to the scale of investment, the activities of the subject interventions and the type of end use or beneficiary. There are, of course, other key drivers, not least the way the intervention was designed to tackle the underlying market failure or equity failure and how well it was targeted, but these important quality dimensions are much more difficult to codify on a consistent basis. As we note below, even capturing information on some basic characteristics proved challenging.

2.22 Originally it was our ambition to capture data on theme/sub-theme, region, programme versus project, location type, scale of public sector investment (e.g. according to different cost per beneficiary bands), the rationale for intervention, the end use (for land and property interventions), the size and target sector of businesses assisted, or the type of beneficiary (for interventions targeted at individual beneficiaries).

2.23 Figure 2.3 on the following page summarises the problems encountered. A lack of data prevented us from categorising the interventions according to the scale of public sector investment, end use, sector or size of business or type of beneficiary. Although our initial expectation was that we would have enough data to categorise by location type, in the end there were too many of a "various" nature to make this analysis usable. The main disaggregations presented in the main

body of the report are therefore by theme and sub-theme, by programme or project and by rationale for intervention.

2.24 As we note in Section 8, a better understanding of how additionality varies for different types of intervention requires much more consistency in the way that evaluation reports present data on additionality according to key intervention characteristics.

Theme and sub-theme definitions

2.25 Figure 2.4 below provides a definition of each of the themes and sub-themes that were used in the study. These are based on the RDA Impact Evaluation Framework and the themes and sub-themes adopted in the recent RDA Impact Evaluations.

Figure 2.3: Availability of information on key characteristics in order to disaggregate additionality data

Characteristic	Comment	Capable of disaggregation?
Theme and sub-theme	Coded for all observations	✓
Programme vs. project	Virtually complete coverage	✓
Rationale for intervention	Coded for the RDA evaluations (data on PwC database, which covers market failure or equity as well as a follow-up categorisation of a limited number of different market failure types) and where clearly stated in other evaluations.	✓
Location type (urban, rural, various)	Although we coded all observations, too many interventions were "various" to be of use.	X
Scale of public sector investment (cost per beneficiary)	Overall project size is inappropriate as it fails to reflect the intensity of support to individual beneficiaries, so a banded cost per beneficiary would be needed. There is substantial coverage in terms of information on number of beneficiaries, but too diverse in terms of types to be capable of analysis given the resources available for this study. Total public sector cost information is weak. Cleaning this up would require more intensive review of reports (e.g. of RDA reports, not budgeted). Even if beneficiary information was cleaned up, weaknesses in cost information could make estimates unreliable. Reluctantly recommend that we do not disaggregate by scale because of these data issues.	X
End use (land and property interventions)	Only 16 observations with any information on property type. Some are multiple types, and others cover multiple commercial use classes. Even if the number were larger this would cause significant difficulties. In any case, it is too small to justify any attempt at disaggregation.	X
Size and target sector of business (business support interventions)	About 50 observations provided some information on sectoral focus. Many different sectors supported (over 20 individual sectors referenced) and very often multiple sectors were targeted. Few references were made to business size. Even with further coding, disaggregation to discrete categories would be very difficult if not impossible.	X
Type of beneficiary (e.g. training and skills interventions)	Information only readily available for 7 observations, but this spans perhaps 3-4 different types. The numbers are too small to justify any attempt at disaggregation.	X

Figure 2.4: Theme and sub-theme definitions

THEME/sub-theme	Examples of intervention types covered by theme/sub-theme include (but are not limited to)*:
BUSINESS DEVELOPMENT & COMPETITIVENESS	
Individual enterprise support	• Providing access to finance for small and medium sized enterprises (SMEs) • Promoting enterprise and assisting company start-ups
Sector/cluster support	• Support for groups of firms in specific industry sectors or clusters to enable them to increase their productivity and competitiveness through, for example, networking events, supply chain development, etc.
Promotion & development of science, R&D and innovation infrastructure	• Innovation centres • Promotion of innovation in SMEs • Development of science parks • Encouragement of collaboration between higher education institutions (HEIs) and business • Commercialisation of HEIs' intellectual property • Support for specific skills to enable the development of a more innovative business base
Attraction of inward investment	• Marketing the region to potential investors and the funding of overseas offices • Infrastructure development on specific inward investment sites
Support for internationalisation of business	• Support for firms with export potential
Sustainable consumption/production	• Initiatives designed to bring about efficiency improvements in business through the adoption of (more) sustainable working practices
REGENERATION THROUGH PHYSICAL INFRASTRUCTURE	
Capital projects	• Land reclamation and development in order to bring mostly vacant or derelict land back into economic use
Public realm	• Improving the quality of the built environment, streetscape and the quality of physical infrastructure
Transport	• Transport and community infrastructure projects (e.g. airport infrastructure, regional train capacity)
Promoting image/culture	• land remediation, developments of and improvements to tourist facilities • the staging of events and the marketing of tourist destinations
PEOPLE AND SKILLS	
Matching people to jobs	• Targeted support to help marginalised people to access opportunities for skills development, employment and enterprise. For example: – Helping offenders leaving prison overcome barriers to employment – Sectorally focused support, for example on construction or childcare – Providing support to help older workers back into the workforce, and to raise awareness amongst employers of the potential opportunities and benefits of recruiting older workers. • Recruitment services and information to employers and graduates to increase graduate retention
Workforce/skills development	• Provision of information, advice and guidance for employers and individuals on available training and skills programmes • Training needs analysis and identification of gaps in training provision • Provision of training, either directly or through grant and matched funding • Sponsored work placements
Provision of level 3 or above qualifications	• Incentives to employers to undertake more higher level skills training in the workforce, including management skills and vocational training
Supporting development of educational infrastructure	• Increasing the provision of further and higher education, through capital investment or direct investment in skills training

** Material drawn from the "Impact of RDA Spending – National Report – Volume 1 - Main Report, March 2009"*

3. Deadweight

Definition

3.1 Deadweight is one of the most important adjustments made in the assessment of additionality. It is the proportion of total outputs/outcomes that would have been secured without the investment in question.

Key findings

Sub-regional level

3.2 Table 3.1 summarises the study findings on deadweight at the sub-regional level. Overall, across 148 evaluations the average level of deadweight at the sub-regional level was 39.5%. The reported values spanned the full range from zero to 100%. An indication of the spread of these values is given by the 95% confidence level in the final column. These are generally low signalling a low degree of variation, for observations over 10 the range is from 0.0% to 15.1% with the majority around only 5-7%. The median is also close to the mean, which suggests that 39.5% is a fairly common estimate of deadweight.

3.3 There is considerable variation in the mean deadweight by theme and sub-theme. The business development and competitiveness theme had an overall mean deadweight of 47.2%. The mean deadweight for the people and skills theme is considerably lower at 26.3% where the variability is also smaller than that found for business development and competitiveness. However, the lowest deadweight of all is associated with physical infrastructure regeneration programmes with a mean deadweight of only 7.5% and very little variability at the 95% confidence level.

3.4 Within the business development and competitiveness sub-themes the study found deadweight to be lowest for sector/cluster support interventions and highest under the promotion and development of science, R&D and innovation infrastructure. Variability is much the same across the business development and competitiveness sub-themes. The limited number of observations available by sub-theme for the other two themes constrains the analysis.

3.5 At the sub-regional level the average mean deadweight for programmes tended to be higher at 44.2% than that for projects (36.1%). The median deadweight was also higher for programmes than projects. There tended to be less variation in the spread of results at the programme level than the project level and this might be expected given that programmes will tend to represent an aggregation of project results.

3.6 Data on deadweight by rationale was limited at the sub-regional level which constrains this analysis. All we can say is that the average deadweight associated with interventions founded on a market failure/efficiency rationale was 45.3% and thus not much different from interventions that did not specify an overall rationale at 38.9%. Variability across programmes was much the same in both cases.

Regional level

3.7 Table 3.2 reports on 363 evaluation observations at the regional level and thus a richer database than that available at the sub-regional level. The mean deadweight was 43%, very close to that found at the sub-regional level at 39.5%. Overall, variability in deadweight across evaluations was relatively low, and indeed lower than at the sub-regional level. The median value was the same as the mean, again indicative of relatively little variation.

3.8 Deadweight was highest for interventions under the business development and competitiveness theme, but compared to the results at the sub-regional level deadweight amongst physical/infrastructure interventions was higher at 33.9% and quite close to that for people and skills interventions. Variability across interventions of different types tended to be quite small under each theme.

3.9 Under the business development theme deadweight at the regional level was very similar across sub-themes, although considerably lower for interventions supporting the internationalisation of business. Under the people and skills theme the lowest deadweight was associated with interventions addressing the provision of qualifications at NVQ Level 3 or above. Across all sub-themes there was relatively limited variability. Under the regeneration theme the highest level of deadweight was associated with capital projects (with the exception of transport for which there was only one result).

3.10 At the regional level deadweight was much the same whether the intervention was a programme or project and there was relatively low variability across a sizeable number of observations.

3.11 Average deadweight was similar by rationale and identified dominant market failure, though the study suggests it is lower for interventions where the dominant market failure is imperfect information and higher where externalities are being tackled.

Table 3.1: Deadweight at the sub regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**148**	**0.0**	**97.5**	**39.5**	**38.5**	**5.0**
THEME AND SUB THEMES						
Business development & competitiveness	**114**	**0.0**	**97.5**	**47.2**	**50.5**	**5.6**
• Individual enterprise support	54	0.0	97.5	50.7	50.0	6.4
• Sector/cluster support	56	0.0	95.0	39.9	33.5	9.6
• Promotion & development of science, R&D and innovation infrastructure	56	0.0	95.0	58.0	60.0	6.9
• Attraction of inward investment	6	0.0	62.0	45.2	51.0	20.3
• Support for internationalisation of business	7	0.0	54.0	9.9	0.0	16.2
• Sustainable consumption/production	0	0.0				
• Other	4	35.0	66.0	47.8	45.0	17.4
Regeneration through physical infrastructure	**39**	**0.0**	**44.3**	**7.5**	**0.0**	**3.9**
• Capital projects	15	0.0	44.3	10.3	0.0	7.8
• Public realm	20	0.0	30.0	6.0	0.0	4.6
• Transport	2	24.0	24.0	24.0	24.0	0.0
• Promoting image/culture	12	0.0	0.0	0.0	0.0	0.0
• Other	5	6.7	26.0	20.1	24.0	7.7
People and skills	**16**	**0.0**	**97.5**	**26.3**	**19.5**	**10.9**
• Matching people to jobs	6	15.0	97.5	32.1	20.0	28.2
• Workforce/skills development	3	15.9	20.0	18.3	19.0	3.0
• Provision of level 3 or above qualifications	4	0.0	43.0	25.5	29.4	24.1
• Supporting development of educational infrastructure	0					
• Other	10	0.0	27.0	18.4	19.0	4.7
TYPE OF SCHEME						
Programme	70	0.0	96.7	44.2	44.0	5.5
Project	78	0.0	97.5	36.1	32.5	8.0
OVERALL RATIONALE						
Equity failure	0					
Market failure/efficiency	15	6.7	96.5	45.3	33.5	15.1
Equity and market failure	0					
Not specified	133	0.0	97.5	38.9	39.0	5.3
DOMINANT MARKET FAILURE						
Public good	0					
Imperfect information	7	6.7	96.7	53.2	43.0	29.3
Externalities	5	6.7	32.0	20.5	25.0	9.9
Market power	0					
Co-ordination failure	0					

Shaded cells with under 10 observations

Table 3.2: Deadweight at the regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**363**	**0.0**	**98.0**	**43.0**	**43.0**	**2.6**
THEME AND SUB THEMES						
Business development & competitiveness	**243**	**0.0**	**97.5**	**45.5**	**50.0**	**3.3**
• Individual enterprise support	132	0.0	97.5	47.3	49.5	3.7
• Sector/cluster support	85	0.0	95.0	45.5	48.0	6.3
• Promotion & development of science, R&D and innovation infrastructure	95	0.0	95.0	49.1	50.0	5.6
• Attraction of inward investment	23	0.0	85.0	47.9	51.0	9.6
• Support for internationalisation of business	22	0.0	70.0	26.5	25.0	10.3
• Sustainable consumption/production	7	11.0	60.0	42.1	53.0	15.9
• Other	8	25.0	60.0	47.0	57.0	12.2
Regeneration through physical infrastructure	**82**	**0.0**	**98.0**	**33.9**	**35.0**	**5.4**
• Capital projects	41	0.0	98.0	40.0	43.0	7.2
• Public realm	25	0.0	60.0	21.8	20.0	8.4
• Transport	1	60.0	60.0	60.0	60.0	–
• Promoting image/culture	8	0.0	77.8	24.5	8.5	23.1
• Other	18	4.0	75.0	43.8	46.0	8.8
People and skills	**72**	**0.0**	**97.5**	**39.4**	**35.5**	**5.2**
• Matching people to jobs	24	0.0	97.5	42.2	37.5	9.1
• Workforce/skills development	29	10.0	94.0	38.6	35.0	7.2
• Provision of level 3 or above qualifications	21	0.0	70.0	31.5	30.0	7.6
• Supporting development of educational infrastructure	9	0.0	94.0	38.6	36.0	21.3
• Other	11	0.0	89.0	35.6	21.6	19.5
TYPE OF SCHEME						
Programme	212	0.0	96.0	43.8	43.0	2.9
Project	151	0.0	98.0	41.8	44.0	4.8
OVERALL RATIONALE						
Equity failure	9	0.0	72.5	35.3	36.0	14.3
Market failure/efficiency	114	0.0	98.0	40.1	40.0	4.5
Equity and market failure	67	0.0	77.8	42.7	41.0	4.6
Not specified	173	0.0	97.5	45.4	50.0	4.2
DOMINANT MARKET FAILURE						
Public good	25	0.0	75.0	41.6	43.0	9.6
Imperfect information	91	0.0	98.0	36.9	33.0	5.0
Externalities	76	0.0	94.0	43.5	48.5	5.1
Market power	6	0.0	98.0	48.9	58.0	32.9
Co-ordination failure	5	1.0	73.0	23.1	4.0	31.2

Shaded cells with under 10 observations

4. Displacement

Definition

4.1 Displacement is the number or proportion of outputs/outcomes that reduce outputs/outcomes elsewhere in the target area for the intervention. Although these effects can occur in product markets (e.g. amongst non-assisted business competing in the same market) or in factor markets (e.g. in the labour market), factor market displacement is rarely researched. This study is solely concerned with product market displacement.

Key findings

Sub-regional level

4.2 Across all intervention types analysed at the sub-regional level (Table 4.1), displacement was estimated to be of the order of 21.5%, although the median (12%) suggests that most values were lower than this. Across the broad intervention themes displacement was relatively low for people and skills initiatives at 17.9% and business development and competitiveness at 19.5%, but considerably higher for initiatives that involved regeneration through physical infrastructure (38.7%). The median statistic suggested that proportionally more initiatives under people and skills and business development had displacement estimates that were less than the mean. There is more similarity in the mean displacement values across initiatives involving regeneration through physical infrastructure.

4.3 Under the business development and competitiveness sub-theme displacement was highest for sector/cluster support interventions and support for individual enterprises at 22.4% and 16.5% respectively, and it was lowest for the promotion and development of science, R&D and innovation infrastructure. Sub-theme disaggregation was also possible under the regeneration through physical infrastructure theme and here displacement effects were highest under the promoting image/ culture sub-theme (49.2%).

4.4 Displacement at the sub-regional level was greater for projects than programmes although the median statistic suggested that there was a tendency for a number of schemes to have values of displacement that were less than the overall mean.

4.5 Insufficient numbers of observations at the sub-regional level constrained the analysis in relation to the categories of rationale/ dominant market failure categories, although interventions made on a market failure/efficiency rationale had a mean displacement factor of 28.5%

Regional level

4.6 At the regional level (Table 4.2) mean displacement of 29.6% was higher than the mean values found at the sub-regional level, as would be expected. The median was quite close to this value and the estimated variability was relatively low with only +/-2.7% at the 95% confidence level. Displacement at the regional level was highest for initiatives that encouraged regeneration through physical infrastructure at 37.4%, while it was 29.3% for business development and competitiveness interventions and 24.7% for the people and skills theme.

4.7 The sub-themes within business development and competitiveness had regional displacement parameters ranging from 18-32% (for those cases with over 10 observations). For sub-themes within people and skills, regional displacement varied from 18.3-26.4% (for sub-themes with more than 10 observations). Mean regional displacement in the physical regeneration sub-themes ranged from 28-45.2%.

4.8 At the regional level, the evidence suggests that displacement is greater for projects (33.9%) than for programmes (26.2%).

4.9 Looking at the overall rationale for intervention, displacement for interventions founded on a market failure/efficiency rationale was 25.8%, similar to interventions which also had an equity rationale (21.6%). Displacement levels were similar across the dominant market failures.

Table 4.1: Displacement at the sub regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**158**	**0.0**	**80.0**	**21.5**	**12.0**	**3.6**
THEME AND SUB THEMES						
Business development & competitiveness	**127**	**0.0**	**80.0**	**19.5**	**9.0**	**3.9**
• Individual enterprise support	53	0.0	65.0	16.5	7.0	5.4
• Sector/cluster support	66	0.0	80.0	22.4	17.5	6.1
• Promotion & development of science, R&D and innovation infrastructure	67	0.0	80.0	12.2	5.0	4.7
• Attraction of inward investment	9	0.0	50.0	15.5	2.3	14.5
• Support for internationalisation of business	7	0.0	51.4	12.3	5.0	15.0
• Sustainable consumption/production	0					
• Other	4	5.0	40.0	15.5	8.5	18.9
Regeneration through physical infrastructure	**41**	**0.0**	**80.0**	**38.7**	**37.0**	**6.7**
• Capital projects	19	0.0	70.0	43.1	48.8	9.7
• Public realm	19	10.0	80.0	39.0	50.0	11.0
• Transport	0					
• Promoting image/culture	12	20.0	70.0	49.2	51.9	10.4
• Other	4	10.0	61.0	24.2	13.0	27.8
People and skills	**13**	**0.0**	**64.0**	**17.9**	**11.0**	**11.1**
• Matching people to jobs	6	8.0	64.0	27.5	12.0	22.9
• Workforce/skills development	3	10.9	13.0	11.6	11.0	1.6
• Provision of level 3 or above qualifications	4	0.0	14.0	9.7	12.5	7.5
• Supporting development of educational infrastructure	0					
• Other	6	0.0	11.0	8.2	10.0	3.8
TYPE OF SCHEME						
Programme	65	0.0	65.0	16.6	10.9	4.8
Project	93	0.0	80.0	25.0	20.0	5.1
OVERALL RATIONALE						
Equity failure	0					
Market failure/efficiency	17	5.0	63.0	28.5	25.0	8.9
Equity and market failure	0					
Not specified	141	0.0	80.0	20.7	10.0	3.8
DOMINANT MARKET FAILURE						
Public good	0					
Imperfect information	8	7.0	60.9	29.6	24.5	14.5
Externalities	5	28.0	63.0	45.6	47.0	16.4
Market power	0					
Co-ordination failure	0					

Shaded cells with under 10 observations

Table 4.2: Displacement at the regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**367**	**0.0**	**100.0**	**29.6**	**25.0**	**2.7**
THEME AND SUB THEMES						
Business development & competitiveness	**252**	**0.0**	**100.0**	**29.3**	**25.0**	**3.3**
• Individual enterprise support	128	0.0	95.0	30.8	28.5	4.0
• Sector/cluster support	94	0.0	100.0	27.7	20.0	6.0
• Promotion & development of science, R&D and innovation infrastructure	105	0.0	100.0	24.5	14.6	5.4
• Attraction of inward investment	24	0.0	95.0	32.0	28.0	11.9
• Support for internationalisation of business	20	0.0	57.9	20.4	22.5	7.6
• Sustainable consumption/production	7	0.0	30.0	14.4	13.0	8.0
• Other	10	10.0	38.0	18.0	13.0	8.0
Regeneration through physical infrastructure	**85**	**0.0**	**100.0**	**37.4**	**29.0**	**6.7**
• Capital projects	44	0.0	95.0	35.6	28.5	9.2
• Public realm	24	0.0	95.0	45.2	30.0	14.1
• Transport	1	13.0	13.0	13.0	13.0	–
• Promoting image/culture	8	3.0	99.0	37.1	28.5	25.5
• Other	18	3.0	100.0	28.0	23.0	12.6
People and skills	**66**	**0.0**	**84.0**	**24.7**	**20.0**	**5.1**
• Matching people to jobs	25	0.0	84.0	26.4	28.0	8.4
• Workforce/skills development	26	0.0	50.0	18.3	19.5	5.6
• Provision of level 3 or above qualifications	18	0.0	42.0	25.3	30.0	5.7
• Supporting development of educational infrastructure	8	0.0	66.0	29.9	28.5	14.6
• Other	9	0.0	80.0	29.0	13.0	22.5
TYPE OF SCHEME						
Programme	205	0.0	100.0	26.2	23.0	2.8
Project	162	0.0	100.0	33.9	25.0	5.0
OVERALL RATIONALE						
Equity failure	9	0.0	42.4	21.6	25.0	10.4
Market failure/efficiency	110	0.0	89.0	25.8	23.6	3.6
Equity and market failure	66	0.0	89.0	22.3	20.0	4.3
Not specified	182	0.0	100.0	34.9	28.0	4.7
DOMINANT MARKET FAILURE						
Public good	25	0.0	50.0	21.4	25.0	6.2
Imperfect information	86	0.0	80.0	25.4	25.5	4.0
Externalities	72	0.0	80.0	20.4	13.0	4.5
Market power	6	4.5	35.0	17.0	18.5	9.8
Co-ordination failure	4	5.0	37.0	23.0	25.0	16.3

Shaded cells with under 10 observations

5. Leakage

Definition

5.1 Leakage is the proportion of outputs/outcomes that benefit those outside the target area of the intervention. As leakage will tend to decrease the wider the spatial area, it is of greatest concern at the sub-regional level though it is also a consideration at the regional level. The concept is not applied at the national level.

Key findings

Sub-regional level

5.2 Table 5.1 shows that mean sub-regional leakage was found to be 15.8% overall, but the median suggests that for most initiatives leakage rates would be lower than this.

5.3 Unfortunately the amount of data on leakage at the sub-regional level was too limited to allow much disaggregation. Leakage was higher in projects (17%) than programmes (10.8%).

Regional level

5.4 As expected, average leakage at the regional level was lower than at the sub-regional level. The regional mean leakage rate was found to be 11.3% with little variation across the main themes where leakage ranged from 10.4-14.2%.

5.5 Programme and project leakage was very similar at the regional level (11.5% and 11.2% respectively).

5.6 Interventions with an overall rationale founded on market failure/efficiency grounds had regional leakage of 13.8%, whereas those which had a combined market failure and equity rationale tended to have lower average leakage of 9.3%. For those interventions founded on market failure/efficiency grounds, the mean regional leakage rate varied from 10.2% to 15.2% across the key types of market failure.

Table 5.1: Leakage at the sub regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**51**	**0.0**	**90.0**	**15.8**	**6.0**	**6.9**
THEME AND SUB THEMES						
Business development & competitiveness	**42**	**0.0**	**90.0**	**16.3**	**0.0**	**8.2**
• Individual enterprise support	2	9.3	23.0	16.1	16.1	19.1
• Sector/cluster support	36	0.0	90.0	16.9	0.0	9.5
• Promotion & development of science, R&D and innovation infrastructure	36	0.0	90.0	16.9	0.0	9.5
• Attraction of inward investment	3	0.0	10.0	6.7	10.0	8.0
• Support for internationalisation of business	1	25.0	25.0	25.0	25.0	–
• Sustainable consumption/production	0					
• Other	0					
Regeneration through physical infrastructure	**9**	**0.0**	**46.0**	**14.1**	**10.0**	**9.3**
• Capital projects	6	0.0	46.0	17.3	12.5	14.0
• Public realm	4	6.0	46.0	17.3	8.6	21.7
• Transport	0					
• Promoting image/culture	0					
• Other	2	6.0	8.0	7.0	7.0	2.8
People and skills	**8**	**5.0**	**46.0**	**13.5**	**9.0**	**9.9**
• Matching people to jobs	4	8.0	46.0	18.1	9.1	21.1
• Workforce/skills development	3	8.0	9.3	8.8	9.0	0.9
• Provision of level 3 or above qualifications	1	9.3	9.3	9.3	9.3	–
• Supporting development of educational infrastructure	0					
• Other	5	5.0	13.0	8.9	9.0	2.8
TYPE OF SCHEME						
Programme	10	5.0	25.0	10.8	9.0	3.8
Project	41	0.0	90.0	17.0	0.0	8.5
OVERALL RATIONALE						
Equity failure	0					
Market failure/efficiency	1	15.0	15.0	15.0	15.0	–
Equity and market failure	0					
Not specified	50	0.0	90.0	15.8	5.5	7.0
DOMINANT MARKET FAILURE						
Public good	0					
Imperfect information	0					
Externalities	0					
Market power	0					
Co-ordination failure	0					

Shaded cells with under 10 observations

Table 5.2: Leakage at the regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**233**	**0.0**	**87.0**	**11.3**	**5.0**	**2.1**
THEME AND SUB THEMES						
Business development & competitiveness	**135**	**0.0**	**87.0**	**11.5**	**3.0**	**3.1**
• Individual enterprise support	36	0.0	50.0	12.9	5.0	6.2
• Sector/cluster support	66	0.0	75.0	10.3	0.0	4.7
• Promotion & development of science, R&D and innovation infrastructure	64	0.0	87.0	10.3	0.0	4.7
• Attraction of inward investment	9	0.0	23.0	5.7	2.5	5.4
• Support for internationalisation of business	6	0.0	5.0	2.2	1.5	2.2
• Sustainable consumption/production	7	0.0	37.0	11.7	10.0	9.7
• Other	8	0.0	40.0	8.5	5.0	9.5
Regeneration through physical infrastructure	**63**	**0.0**	**85.0**	**10.4**	**5.0**	**3.5**
• Capital projects	38	0.0	85.0	10.4	5.0	5.1
• Public realm	11	0.0	40.0	9.1	5.0	7.6
• Transport	1	5.0	5.0	5.0	5.0	–
• Promoting image/culture	3	2.6	5.0	4.2	5.0	1.9
• Other	15	0.0	30.0	11.2	5.0	5.4
People and skills	**48**	**0.0**	**75.0**	**14.2**	**8.0**	**4.7**
• Matching people to jobs	14	1.0	30.0	13.7	10.0	5.5
• Workforce/skills development	22	0.0	39.0	7.4	5.0	4.2
• Provision of level 3 or above qualifications	5	0.0	75.0	31.0	25.0	30.9
• Supporting development of educational infrastructure	9	1.0	27.5	13.8	10.0	6.8
• Other	5	5.0	61.0	28.4	25.0	22.2
TYPE OF SCHEME						
Programme	114	0.0	85.0	11.5	5.0	2.7
Project	119	0.0	87.0	11.2	0.0	3.3
OVERALL RATIONALE						
Equity failure	9	0.0	85.0	18.1	10.0	18.6
Market failure/efficiency	98	0.0	87.0	13.8	5.0	3.4
Equity and market failure	63	0.0	40.0	9.3	5.0	2.3
Not specified	63	0.0	75.0	8.5	0.0	4.7
DOMINANT MARKET FAILURE						
Public good	25	0.0	61.0	14.9	6.0	6.5
Imperfect information	74	0.0	66.0	15.2	10.0	3.8
Externalities	70	0.0	66.0	10.2	5.0	3.1
Market power	6	0.0	24.0	11.8	12.5	8.1
Co-ordination failure	3	10.0	31.0	23.7	30.0	16.4

Shaded cells with under 10 observations

6. Substitution

Definition

6.1 Substitution is defined by the RDA Impact Evaluation Framework as a negative effect that arises when a firm substitutes a jobless person to replace an existing worker to take advantage of the public sector assistance. Much of the evidence on substitution in this study has been drawn from the recent portfolio of RDA evaluations which has followed this definition.

Key findings

Sub-regional level

6.2 Table 6.1 shows that there were relatively few observations on substitution at the sub-regional level and the mean was 2.7%. A lack of data constrained our ability to disaggregate the data by sub-theme or other characteristic at this spatial level.

Regional level

6.3 There were considerably more observations on substitution at the regional level (Table 6.2). The mean rate of substitution was 3.5% at the regional level, and this ranged from 2.2% for interventions involving regeneration through physical infrastructure through 3.4% for business development and competitiveness interventions to 4.4% for those concerned with people and skills. Looking across the people and skills sub-themes, the evidence suggests that interventions involving matching people to jobs (e.g. job brokerage schemes) have higher substitution at 7.6% than interventions involving workforce skills development.

6.4 The evidence suggests that substitution is higher for programmes (5.8%) than projects (1.6%), although it should be noted that in both types of intervention the median value is zero confirming that overall substitution is not seen as a significant issue.

6.5 In terms of the overall rationale, substitution was 5.1% for interventions founded entirely on a market failure/efficiency rationale and 4.4% for those tackling a combination of market and equity failures. Drilling further into the dominant market failure, substitution was 2.3% for those intervening because of public good arguments, compared with 5.9% for those aiming to tackle externalities and 6.5% for those interventions tackling imperfect information failures.

Table 6.1: Substitution at the sub regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**37**	**0.0**	**100.0**	**2.7**	**0.0**	**5.4**
THEME AND SUB THEMES						
Business development & competitiveness	**37**	**0.0**	**100.0**	**2.7**	**0.0**	**5.4**
• Individual enterprise support	36	0.0	100.0	2.8	0.0	5.5
• Sector/cluster support	36	0.0	100.0	2.8	0.0	5.5
• Promotion & development of science, R&D and innovation infrastructure	0					
• Attraction of inward investment	0					
• Support for internationalisation of business	1	0.0	0.0	0.0	0.0	–
• Sustainable consumption/production	0					
• Other	0					
Regeneration through physical infrastructure	**0**					
• Capital projects	0					
• Public realm	0					
• Transport	0					
• Promoting image/culture	0					
• Other	0					
People and skills	**0**					
• Matching people to jobs	0					
• Workforce/skills development	0					
• Provision of level 3 or above qualifications	0					
• Supporting development of educational infrastructure	0					
• Other	0					
TYPE OF SCHEME						
Programme	1	0.0	0.0	0.0	0.0	–
Project	36	0.0	100.0	2.8	0.0	5.5
OVERALL RATIONALE						
Equity failure	0					
Market failure/efficiency	0					
Equity and market failure	0					
Not specified	37	0.0	100.0	2.7	0.0	5.4
DOMINANT MARKET FAILURE						
Public good	0					
Imperfect information	0					
Externalities	0					
Market power	0					
Co-ordination failure	0					

Shaded cells with under 10 observations

Table 6.2: Substitution at the regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**192**	**0.0**	**87.5**	**3.5**	**0.0**	**1.6**
THEME AND SUB THEMES						
Business development & competitiveness	**121**	**0.0**	**87.5**	**3.4**	**0.0**	**2.2**
• Individual enterprise support	35	0.0	70.0	6.2	0.0	5.3
• Sector/cluster support	61	0.0	87.5	2.3	0.0	3.0
• Promotion & development of science, R&D and innovation infrastructure	59	0.0	10.0	0.2	0.0	0.3
• Attraction of inward investment	6	0.0	5.0	0.8	0.0	1.8
• Support for internationalisation of business	3	0.0	10.0	3.3	0.0	8.0
• Sustainable consumption/production	5	0.0	16.0	3.2	0.0	7.0
• Other	4	0.0	10.0	2.5	0.0	5.7
Regeneration through physical infrastructure	**32**	**0.0**	**61.0**	**2.2**	**0.0**	**3.8**
• Capital projects		0.0	61.0	4.1	0.0	7.7
• Public realm		0.0	0.0	0.0	0.0	0.0
• Transport	0					
• Promoting image/culture	1	0.0	0.0	0.0	0.0	–
• Other	9	0.0	4.0	0.4	0.0	0.9
People and skills	**42**	**0.0**	**60.0**	**4.4**	**0.0**	**3.2**
• Matching people to jobs	11	0.0	60.0	7.6	0.0	11.0
• Workforce/skills development	22	0.0	20.0	3.2	0.0	2.5
• Provision of level 3 or above qualifications	1	0.0	0.0	0.0	0.0	–
• Supporting development of educational infrastructure	7	0.0	16.0	2.3	0.0	4.8
• Other	4	0.0	15.0	3.8	0.0	8.5
TYPE OF SCHEME						
Programme	86	0.0	70.0	5.8	0.0	3.0
Project	106	0.0	87.5	1.6	0.0	1.7
OVERALL RATIONALE						
Equity failure	9	0.0	10.0	1.1	0.0	2.3
Market failure/efficiency	76	0.0	70.0	5.1	0.0	2.9
Equity and market failure	50	0.0	87.5	4.4	0.0	4.2
Not specified	57	0.0	29.0	0.9	0.0	1.1
DOMINANT MARKET FAILURE						
Public good	23	0.0	20.0	2.3	0.0	2.1
Imperfect information	70	0.0	87.5	6.5	0.0	4.2
Externalities	46	0.0	87.5	5.9	0.0	4.6
Market power	5	0.0	0.0	0.0	0.0	0.0
Co-ordination failure	2	0.0	0.0	0.0	0.0	0.0

Shaded cells with under 10 observations

7. Multipliers

Definition

7.1 Multipliers quantify the further economic activity (e.g. jobs, expenditure or income) stimulated by the direct benefits of an intervention. They take two principal forms: an income ("induced") multiplier which is associated with additional income to those employed by the project (income multipliers) and a supply ("indirect") multiplier, with local supplier purchases (supplier multipliers). The multiplier data captured by this study are "short run" multipliers. (Other multipliers, not covered here, consider longer term dynamic effects such as induced inward migration).

Key findings

7.2 The study captured a single combined multiplier which reflects these effects at the sub-regional and regional levels.

7.3 The multiplier data presented here needs to be treated with some caution. As noted in Annex A, new research on multipliers in England has been hindered by the lack of regional input-output tables. The evaluation data captured by this study drew heavily on either Scottish Input-Output Tables or the multiplier ranges quoted in the existing Additionality Guide. Since there tends to be considerable re-use of the same data, the analysis for this study will lead to an averaging effect across these two sources. The data in Table 7.1 is included for completeness, but practitioners are reminded that these are likely to be less reliable than the original evaluation benchmarks published in the Additionality Guide (which draw on primary research) or the Scottish Input-Output tables.

Sub-regional level

7.4 At the sub-regional level the overall mean multiplier value was 1.25 and the median was quite close at 1.21 (Table 7.1). The number of observations constrains the amount of disaggregation that is possible, but the average multiplier for regeneration through physical infrastructure initiatives was 1.33 while the multiplier for business development and competitiveness interventions was 1.25. The mean value for programmes and projects was much the same (1.26/1.24).

Regional level

7.5 As would be expected, the mean regional multiplier (1.45) was higher than at the sub-regional level, with the median again being fairly close at 1.43 (Table 7.2). Regional multipliers were higher for business development and competitiveness initiatives (1.51) than for interventions involving regeneration through infrastructure (1.40). People and skills interventions had an average regional multiplier of 1.36.

7.6 The projects in the study database have higher regional multipliers (1.51) than programmes (1.40).

7.7 Under the overall rationale category the range of multiplier was 1.29 for interventions designed solely to tackle equity failures, and 1.40 for those with market failure/ efficiency objectives. Interventions that addressed the imperfect information market failure had the highest multiplier (for categories containing 10 or more observations) (1.41).

Table 7.1: Multipliers at the sub regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**137**	**1.00**	**2.71**	**1.25**	**1.21**	**3.9**
THEME AND SUB THEMES						
Business development & competitiveness	**117**	**1.00**	**2.17**	**1.25**	**1.20**	**3.7**
• Individual enterprise support	49	1.00	1.50	1.21	1.20	2.8
• Sector/cluster support	64	1.00	2.17	1.26	1.21	6.1
• Promotion & development of science, R&D and innovation infrastructure	63	1.00	2.17	1.20	1.16	5.4
• Attraction of inward investment	5	1.10	1.98	1.42	1.40	33.1
• Support for internationalisation of business	7	1.20	1.56	1.35	1.30	10.2
• Sustainable consumption/production	0					
• Other	4	1.10	1.80	1.28	1.13	38.8
Regeneration through physical infrastructure	**35**	**1.10**	**2.71**	**1.33**	**1.32**	**9.9**
• Capital projects	17	1.10	2.71	1.46	1.38	18.0
• Public realm	16	1.10	2.71	1.26	1.21	19.8
• Transport	0					
• Promoting image/culture	12	1.32	1.46	1.36	1.35	3.1
• Other	1	1.24	1.24	1.24	1.24	–
People and skills	**5**	**1.09**	**2.71**	**1.66**	**1.40**	**67.2**
• Matching people to jobs	2	1.12	2.71	1.92	1.92	220.4
• Workforce/skills development	0					
• Provision of level 3 or above qualifications	3	1.09	1.98	1.49	1.40	62.0
• Supporting development of educational infrastructure	0					
• Other	1	1.98	1.98	1.98	1.98	–
TYPE OF SCHEME						
Programme	48	1.00	1.53	1.24	1.21	3.1
Project	89	1.00	2.71	1.26	1.20	5.7
OVERALL RATIONALE						
Equity failure	0					
Market failure/efficiency	16	1.00	1.53	1.25	1.23	6.9
Equity and market failure	0					
Not specified	121	1.00	2.71	1.25	1.20	4.3
DOMINANT MARKET FAILURE						
Public good	0					
Imperfect information	7	1.09	1.41	1.26	1.24	7.6
Externalities	5	1.21	1.28	1.23	1.22	2.7
Market power	0					
Co-ordination failure	0					

Shaded cells with under 10 observations

Table 7.2: Multipliers at the regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**326**	**1.00**	**3.25**	**1.45**	**1.43**	**3.1**
THEME AND SUB THEMES						
Business development & competitiveness	**217**	**1.00**	**3.25**	**1.51**	**1.50**	**4.3**
• Individual enterprise support	100	1.00	171	1.44	1.45	3.5
• Sector/cluster support	89	1.00	3.25	1.60	1.52	9.1
• Promotion & development of science, R&D and innovation infrastructure	102	1.00	2.90	1.56	1.50	7.4
• Attraction of inward investment	20	1.00	3.25	1.48	1.41	20.4
• Support for internationalisation of business	19	1.00	1.82	1.45	1.44	8.5
• Sustainable consumption/production	7	1.00	1.50	1.36	1.40	14.5
• Other	10	1.10	1.60	1.33	1.35	9.3
Regeneration through physical infrastructure	**80**	**1.00**	**3.25**	**1.40**	**1.39**	**5.9**
• Capital projects	41	1.00	3.25	1.42	1.39	10.8
• Public realm	23	1.10	1.73	1.36	1.44	6.6
• Transport	1	1.40	1.40	1.40	1.40	–
• Promoting image/culture	6	1.30	1.73	1.55	1.57	15.2
• Other	16	1.15	1.62	1.36	1.39	6.3
People and skills	**62**	**1.00**	**3.25**	**1.36**	**1.30**	**7.5**
• Matching people to jobs	23	1.00	1.73	1.31	1.30	8.0
• Workforce/skills development	26	1.00	1.60	1.32	1.30	5.9
• Provision of level 3 or above qualifications	18	1.00	3.25	1.48	1.44	22.3
• Supporting development of educational infrastructure	9	1.10	1.60	1.39	1.40	13.4
• Other	6	1.10	3.25	1.59	1.33	72.4
TYPE OF SCHEME						
Programme	181	1.00	1.93	1.40	1.40	2.4
Project	145	1.00	3.25	1.51	1.50	6.3
OVERALL RATIONALE						
Equity failure	9	1.10	1.50	1.29	1.30	10.0
Market failure/efficiency	109	1.00	1.93	1.40	1.39	3.6
Equity and market failure	64	1.05	1.62	1.33	1.30	3.3
Not specified	144	1.00	3.25	1.55	1.50	6.0
DOMINANT MARKET FAILURE						
Public good	25	1.00	1.93	1.29	1.25	7.9
Imperfect information	82	1.00	1.93	1.41	1.38	4.4
Externalities	75	1.00	1.70	1.38	1.39	3.6
Market power	6	1.21	1.37	1.30	1.30	4.5
Co-ordination failure	5	1.36	1.84	1.60	1.61	16.7

Shaded cells with under 10 observations

8. Net additionality

Definition

8.1 Net additionality reflects the final overall additional activity that arises after the original gross benefits have been adjusted to take account of the deadweight, leakage, displacement, substitution and multiplier effects described above. Put simply, the net additionality ratio is that proportion of the gross effects which are net additional, taking all of the additionality adjustments into account.

8.2 Unlike the other components of additionality, where the study captured the estimate as given, the net additionality ratio was calculated as part of this study on a standard basis using the equation (1-dw)*(1-l)*(1-dp)*(1-s)*m, where dw = deadweight; l = leakage dp = displacement; s = substitution (where applicable); and m = multiplier. This equation is entirely consistent with the Additionality Guide and the net additionality calculation in the recent RDA Impact Evaluation.

8.3 We adopted a clear decision rule that **where an observation contained missing data on the deadweight, displacement, leakage or multiplier estimate, then the net additionality ratio could not be calculated**. Since there were many sub-regional evaluation observations with no leakage data, this means that relatively few net additionality ratios could be calculated at this spatial level. Even at the regional level there were some gaps in the additionality data. As the net additionality results in Tables 8.1 and 8.2 have only been calculated for those observations with complete observations for at least deadweight, leakage, displacement and multipliers, readers should note that **it is not possible to derive exactly the same result from a manual calculation of the net additionality formula using the data in Sections 3-7**.

Key Findings

Sub-regional level

8.4 Overall, the mean net additionality ratio at the sub-regional level was estimated at 45.8% with a median of 47% (Table 8.1). Looking across the principal themes, the mean ratio was lowest under the business development and competitiveness theme at 35.9%. The value was around 54% for both regeneration through physical infrastructure and people and skills. The ratio was greater for programmes rather than projects at the sub-regional level (57.1% compared to 27.1%). Disaggregation according to rationale and dominant market failure was constrained by the number of observations.

Regional level

8.5 At the regional level the overall mean net additionality ratio was 50.3% and the median was 48.8%. There was less variation in net additionality by theme at the regional level than there was at the sub-regional level, ranging from 49.7-55.1%, but there is considerable variation by sub-theme as Table 8.2 shows.

8.6 Once again for the interventions on the study database regional net additionality is higher for programmes (54.8%) than projects (43.8%). It is also higher for interventions founded entirely on an equity rationale (57.8%) than those on purely a market failure/efficiency rationale (52.1%). Taking those dominant market failures with more than 10 observations, it was highest (52.6%) for interventions tackling an imperfect information market failure.

Key drivers of net additionality

8.7 The results in Sections 3 to 7 show the relative importance of the individual additionality parameters in the overall net additionality result.

8.8 At the sub-regional level, deadweight is clearly the crucial variable (39.5% across all interventions), but displacement (21.5%) and leakage (15.8%) play an important role. The multiplier effect is also important, even at this spatial level (25%/1.25). On average substitution plays a very modest role in the calculation (2.7%), though of course its importance will vary depending on the theme or sub-theme in question.

8.9 At the regional level, deadweight is still important (43% across all interventions), but the displacement (29.6%) and multiplier (45%/1.45) effects are more dominant and the leakage effect (11.3%) less important. Again, substitution is a relatively minor contributor to additionality for most interventions.

Table 8.1: Net additionality ratios at the sub regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**74**	**0.0**	**152.9**	**45.8**	**47.0**	**6.8**
THEME AND SUB THEMES						
Business development & competitiveness	**35**	**0.0**	**152.9**	**35.9**	**20.0**	**13.3**
• Individual enterprise support	7	35.2	152.9	70.2	43.0	40.6
• Sector/cluster support	27	0.0	130.0	26.8	15.0	12.5
• Promotion & development of science, R&D and innovation infrastructure	26	0.0	100.0	22.9	14.5	10.1
• Attraction of inward investment	0					
• Support for internationalisation of business	2	42.6	130.0	86.3	86.3	121.1
• Sustainable consumption/production	0					
• Other	0					
Regeneration through physical infrastructure	**18**	**35.2**	**76.1**	**54.2**	**50.0**	**6.2**
• Capital projects	6	35.2	76.0	51.7	47.0	15.0
• Public realm	17	36.0	76.1	55.4	50.0	6.1
• Transport	0					
• Promoting image/culture	0					
• Other	0					
People and skills	**22**	**36.0**	**66.0**	**54.0**	**56.0**	**3.6**
• Matching people to jobs	7	41.0	62.0	51.7	56.0	7.5
• Workforce/skills development	11	36.0	62.0	49.5	50.0	5.1
• Provision of level 3 or above qualifications	6	36.0	57.0	50.0	51.5	6.7
• Supporting development of educational infrastructure	3	49.0	61.0	56.7	60.0	9.2
• Other	7	47.0	66.0	58.9	62.0	5.7
TYPE OF SCHEME						
Programme	46	36.0	152.9	57.1	52.5	6.3
Project	28	0.0	130.0	27.1	15.7	12.1
OVERALL RATIONALE						
Equity failure	0					
Market failure/efficiency	2	135.0	152.9	144.0	144.0	24.8
Equity and market failure	0					
Not specified	72	0.0	130.0	43.0	46.0	5.8
DOMINANT MARKET FAILURE						
Public good	0					
Imperfect information	2	135.0	152.9	144.0	144.0	24.8
Externalities	0					
Market power	0					
Co-ordination failure	0					

Shaded cells with under 10 observations

Table 8.2: Net additionality ratios at the regional level

Theme/sub-theme	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
ALL CATEGORIES						
All observations	**226**	**0.0**	**189.0**	**50.3**	**48.8**	**3.8**
THEME AND SUB THEMES						
Business development & competitiveness	**121**	**0.0**	**189.0**	**49.7**	**47.3**	**6.1**
• Individual enterprise support	44	9.6	189.0	58.3	58.4	9.5
• Sector/cluster support	61	0.0	180.0	42.4	33.4	9.0
• Promotion & development of science, R&D and innovation infrastructure	56	0.0	180.0	44.3	39.0	10.0
• Attraction of inward investment	14	16.5	81.0	49.9	51.7	12.4
• Support for internationalisation of business	12	23.6	89.8	59.3	63.4	10.9
• Sustainable consumption/production	7	42.1	90.1	55.7	46.3	13.4
• Other	8	44.6	60.5	49.1	46.3	3.9
Regeneration through physical infrastructure	**66**	**1.8**	**103.5**	**50.8**	**48.5**	**5.2**
• Capital projects	38	1.8	96.2	46.8	47.7	6.4
• Public realm	20	41.7	103.5	61.4	53.3	8.8
• Transport	1	46.3	46.3	46.3	46.3	–
• Promoting image/culture	3	46.3	85.1	62.8	57.0	27.8
• Other	17	17.4	83.0	46.0	46.3	7.9
People and skills	**66**	**4.5**	**84.0**	**55.1**	**61.0**	**4.9**
• Matching people to jobs	27	14.4	83.0	53.4	52.1	6.8
• Workforce/skills development	34	4.5	83.0	57.8	63.9	6.6
• Provision of level 3 or above qualifications	21	23.6	83.0	62.0	65.3	7.3
• Supporting development of educational infrastructure	8	4.5	74.9	46.0	53.2	18.0
• Other	14	22.0	84.0	55.1	46.6	9.9
TYPE OF SCHEME						
Programme	134	4.5	189.0	54.8	51.7	4.0
Project	92	0.0	180.0	43.8	40.7	7.0
OVERALL RATIONALE						
Equity failure	9	38.2	70.4	57.8	59.4	6.5
Market failure/efficiency	92	1.8	189.0	52.1	48.7	6.0
Equity and market failure	61	7.2	103.5	50.5	46.3	5.3
Not specified	64	0.0	180.0	46.6	45.5	8.8
DOMINANT MARKET FAILURE						
Public good	25	13.9	103.5	47.0	42.1	8.2
Imperfect information	71	1.8	189.0	52.6	48.6	7.2
Externalities	68	4.5	103.5	49.7	46.3	5.5
Market power	6	1.8	93.6	46.0	44.0	27.0
Co-ordination failure	3	63.2	85.9	73.1	70.3	16.1

Shaded cells with under 10 observations

9. Looking ahead: strengthening the evidence

Introduction

9.1 An exercise of the kind undertaken by this study would have been much more limited in scope if it had been undertaken a decade ago. Over that period, due to the Green Book, Additionality Guide, Impact Evaluation Framework and other key guidance documents, the main components of additionality are now widely understood and the measurement of key parameters is a more common feature of many evaluations. However, there is much more to do.

9.2 Looking ahead, there are three main challenges:

- to refine the measurement of additionality components through the use of standardised definitions across the UK;
- to make the measurement of additionality more consistent through greater consistency in the design and use of questionnaires;
- to capture key contextual variables, on a consistent basis, that might help to explain variations in additionality.

Refining measurement by improving definitions

9.3 The components of additionality captured by this study are broadly understood. However, in undertaking this exercise it was apparent that even relatively straightforward concepts such as deadweight are sometimes handled in different ways by different evaluators. There appears to be widespread confusion between displacement and substitution, which may be hindering the measurement of the latter. Although the definitional issue is not a major, theoretical one, too much time is still taken up by debating what a concept means rather than on how the data should be collected and analysed. These relatively minor inconsistencies between definitions could be remedied quickly and effectively by an inclusive Steering Group such as the one convened for this study.

Recommendation 1: Defining additionality

The definitions of each component of additionality should be reviewed to improve their clarity. This process should involve not only Government, but consultation with evaluation practitioners in the academic and private sectors. The work on definitions should be fully integrated with the development of practical guidance on the measurement of additionality. The appropriate areas of each Departmental or Agency website could contain the standard definitions and guidance material and links to HM Treasury's Green Book website.

Refining measurement through more consistent questionnaires

9.4 Different evaluation practitioners have developed their own, in some cases subtly different, approaches to measuring additionality components, often using detailed questionnaires in surveys of businesses or individuals. Until now, key Government guidance documents have focused on what additionality is and how the concept should be applied, but there is little practical guidance on what questions to ask and how the data that comes back from surveys should be manipulated.

9.5 We believe that standardised questions of this kind, along with clear and detailed advice on analysis, would be of enormous value to the evaluation community. They would drive up quality and generate significantly more usable additionality data for benchmarking purposes. There is no shortage of questionnaire material to work from. Every evaluation practitioner will have their own standard questions for different types of intervention or beneficiary. The task is to harness this expertise and set a new minimum standard for additionality questions going forward.

Recommendation 2: Standardised additionality questions and analysis

Standard questions should be developed for surveys of business and individual beneficiaries covering the main components of additionality. Accompanying guidance on the use of surveys and a spreadsheet analysis tool should also be developed and disseminated. Once again, the design process should be done in an inclusive way that takes full advantage of practitioner expertise. Again, this material could usefully be hosted on Government websites with links to HM Treasury's Green Book website.

A better understanding of factors influencing additionality through more consistent coding of explanatory variables

9.6 Many individual evaluations have shown that different components of additionality can vary according to variables such as the scale of intervention, the size of firm, the type of beneficiary, the end use of the land and property project etc.. Our ambition at the outset of this study was to capture data from evaluations which would allow the results to be disaggregated by these key parameters. In the end, there was too little consistency in the way this data was presented in evaluations to enable that to be done with the available resources for this study. As a result, the tables in Sections 2 to 7 disaggregate the data according to three main dimensions only: theme/sub-theme; whether the intervention was a programme or project; and the rationale for intervention. Even in the case of theme/sub-theme, many interventions were seen as "cross-cutting" and we were unable to identify the dominant theme in every case.

9.7 Looking ahead, there is an opportunity to define a standard suite of explanatory variables and a template for the presentation of key results. This would significantly improve the potential for additionality benchmarking in the future. With this information in place it would also be possible to undertake some formal statistical modelling of the additionality database that could help in developing ready reckoners for economic development and regeneration practitioners.

Recommendation 3: Data templates

Evaluators should be encouraged to disaggregate their results for each additionality component, for each key output, by the following characteristics:

- the dominant theme and sub-theme;
- whether the intervention is a programme or project;
- the unit cost of the intervention per beneficiary;
- the rationale for intervention;
- the size and sectoral characteristics of firms (for business support projects);
- the characteristics of individual beneficiaries (for projects targeted at individuals);
- use class (for land and property projects).

A standardised evaluation data template should be designed and promoted to improve the consistency of presentation and encourage greater disaggregation of additionality data along the lines above.

Broadening the research to capture data to inform VFM benchmarks

9.8 Finally, the subject of value for money (VFM) was beyond the scope of this study. In principle, there will not be a simple relationship between additionality and VFM. For example, a project with high returns but low additionality may have better overall VFM than a project with low returns and high additionality. A natural extension of additionality research in the future would be to gather data on costs and benefits which, alongside data on additionality, could enhance practitioners' ability to benchmark the different dimensions of VFM (economy, effectiveness and cost-effectiveness/efficiency) for their interventions. As with the explanatory variables above, this could be supported by greater consistency in the way that key evaluation data are presented.

Annex A: Augmenting the assessment of additionality to include agglomeration effects

Introduction

A1. Whilst the general approach that is currently being used to assess additionality provides a good base on which to build there are a number of areas where the academic and evaluation literature suggests that there may be some scope to update evidence and assumptions. One area that has been the subject of recent interest relates to the possible inclusion of a multiplier that captures agglomeration benefits. This section considers issues that arise in seeking to make such an adjustment.

How do agglomeration benefits arise?

A2. It is helpful to begin by describing the benefits that it is argued companies obtain from being located in or near an agglomeration. Three main sources of agglomeration externalities have been emphasised in a large literature that dates from the time of Marshall (1920). The first of these are 'input externalities' whereby the concentration of companies that produce the same product benefit from the co-location of input suppliers that provide specialised services and products, lower transport costs and procurement economies. The second embrace labour market externalities that arise from the geographic concentration of workers with specialised skills of relevance to an industry. The third relate to knowledge externalities that reflect the benefits of close proximity in sharing and exchanging knowledge of relevance to an industry.

A3. These economic benefits arising from spatial proximity between companies within the same industry have usually been termed 'localisation economies' to distinguish them from urbanisation economies where the benefits of spatial agglomeration are thought to reflect factors that are not necessarily specific to any one industry.

Measuring spatial agglomeration

A4. Empirical research seeking to assess the magnitude of the benefits that arise to companies from agglomeration has not found it easy to derive a measure of agglomeration within a region or nation (Rosenthal and Strange, 2004). Part of the problem is that in practice it is not easy to 'pick' spatial units in a carte blanche fashion and add them together across the geography of physical space so that they contain the companies that are hypothesised to be benefiting from

the externality effects on offer and which are contained in the economic 'glue' of the localisation phenomenon.

A5. Rosenthal and Strange (2004) point out that theoretically the scale of agglomeration benefit secured by a company will vary according to its industrial composition, its location and the point in time at which it is measured. Therefore the most appropriate geography to 'define' the relevant spatial units that should be used for empirical research cannot in any real sense be expected to be fixed. As they remark *'It is fair to say that relatively little of the empirical work on the scope of agglomeration economies has addressed the issue of establishment uniqueness and continuity. Instead, with regard to geography, most studies that have assessed the economic benefits of agglomeration have tended to group industries and plants into politically defined regions such as Metropolitan Statistical Areas (MSAs) or countries. Activity in neighbouring regions is then typically assumed, usually implicitly, to have no effect on the region in question, and all activity within the specified region is treated as being situated at exactly the same spot'*. (Rosenthal and Strange, 2004).

A6. To undertake empirical studies of the contribution that agglomeration makes to the economic competitiveness of companies and thus the scope for adding multiplier adjustments to the existing additionality framework requires good quality data but, as Coombes and Overman (2004) comment, the quality of the data is rather weak at the national, regional or urban levels in the EU. It is for reasons of this kind that studies have used establishment based data that allows them to form their spatial units by adding companies together across 'continuous space' (Duranton and Overman, 2002). However, the data requirements of such an approach are very demanding and few researchers have access to such data (Head and Mayer, 2004). In fact, the spatial boundaries for which data are collected in most countries is often more a reflection of administrative convenience rather than any judgement on the economic boundaries that are relevant to the acquisition of localisation effects. As Guillain and Le Gallo (2006) point out, *"despite the significant interest in the benefits that arise from economic agglomeration 'the identification of the spatial limits of agglomeration remains problematic"*. And they emphasise, *"this use of the term 'agglomeration' in a general sense can be justified since the forces at work in the agglomeration process depend on the spatial scale considered-so that the type of agglomeration to which the authors refer has to be specified depending on the type of analysis."* However, as they go on to argue, there is still no *"agreement in the empirical literature as to the geographical limits of the forces at work"*.

A7. A common starting point in existing empirical work is to produce an index of agglomeration on the basis of relative concentration of either population or employment in the areas for which government collects statistical data. In much of the work the index seeks to incorporate a sectoral dimension and to derive a Gini coefficient of relative sectoral spatial specialisation. The Krugman index of specialisation can also be given a spatial dimension and, as Coombes and Overman (2004) remark, Herfindhal indices derived as the sum of squares of industry shares in local activity have also been used.

A8. One approach is to use the coefficient of variation of employment or population densities at the NUTS 1, 2 or 3 levels. Thus, the coefficient of variation of the density of regional employment (population weighted) can be derived at a number of different spatial scales (NUTS 1, 2 and 3). Another commonly used measure is to calculate the share or proportion of a country's population living in its three top cities (as measured by population size).

Empirical evidence as to the possible impact of agglomeration economies on companies and a possible way forward

A9. Although it has only been possible in this study to provide a relatively brief review of what is a large and rapidly growing literature, it is clear that obtaining precise estimates of the size of the benefits that companies obtain from relatively close spatial proximity to other companies is constrained by the availability of good quality data. New research findings are now emerging and a recent example is that of Martin, Mayer and Mayernis (2008). They provide evidence on the impact of spatial concentration of firm level productivity in France.

A10. The researchers provide empirical estimates of the impact of spatial agglomeration on the productivity of companies using establishment based data over the period 1996-2004. They conclude that French companies *"benefit from localisation economies, but not from urbanisation economies nor from competition effects. The benefits generated by increased sectoral clustering, though positive and highly significant are modest and geographically very limited. The gains from clusters are also quite well internalised by firms in their location choice: we find very little difference between the geography that would maximise productivity gains and the geography actually observed."* (Martin et. al, 2008).

A11. They argue that the gains to productivity from spatial clustering do exist with a 10% increase in employment in neighbouring firms of the same industry increasing a firm productivity by around 0.4-0.5%. However, they find that the relationship is bell shaped and there is a 'peak agglomeration' that maximises productivity. Thus *"we find that a firm (-) that would move from a location with no other workers to a location with 650 employees from its own sector (the peak of the observed distribution in France) would gain 25% in total factor productivity. However, going to an 'over-crowded area' (with more than 9000 employees) would eliminate the Total Factor Productivity gains"*.

A12. Although much more research is needed the evidence to date suggests that the externalisation effects associated with agglomeration tend to be fairly localised with significant geographic decay. However, the size of the effect varies significantly by the industrial sector being considered. The Martin, Mayer and Mavernis research also indicates that to some degree agglomeration economies may be offset by congestion effects. The precise trade-offs, and how they might vary according to distance from core agglomerations, remains an area that needs more research at the present time.

A13. In the most straightforward case, calculations of net additionality are designed to provide an indication of the overall economic benefit that a policy induced investment brings to an area. In perhaps the simplest example the policy induced investment will be a new business or company attracted to the area that would not otherwise have been there in the absence of the policy concerned. In the case of an income multiplier the argument for making an adjustment is that the attraction of the company to the area induces further rounds of expenditure from the stream of income that the company generates. The argument for making the income multiplier adjustment is thus fairly straight forward. Does such an argument apply in the case of the benefits that may arise from agglomeration?

A14. The key consideration would seem to be one of scale of impact. As the discussion above has indicated, the benefits from agglomeration occur because of the benefits to companies from concentration of economic activity in a specific geographical location.

A15. The argument for applying an agglomeration multiplier would seem to rest on whether the attraction of the company investment to an area was capable of changing the size of the agglomeration benefit. Such impacts would vary by sector, but the scale of the investment attracted would have to be significant. Arguments for the generalised application of an agglomeration in the same way as an income multiplier do not appear strong, although may be relevant in extreme cases. Given the desire to avoid over-estimation of the benefits that are alleged to arise from policy induced activity it would seem sensible to proceed with caution and avoid any mechanical application of yet further multipliers to the calculation of net additionality at the local level.

A16. Where it would seem more appropriate to consider the arguments for applying agglomeration multipliers is where policy is directed to augmenting the scale and quality of infrastructure in an area, particularly as it relates to transport. In these cases the investment could potentially alter the size of the trade-offs between the benefits that a company might secure from being in or near an agglomeration, and the congestion effects.

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Annex B: Summary tables

Introduction

B1. This Annex provides summary tables showing additionality by:

- Spatial area
- Primary theme
- Programme vs. project
- Overall rationale
- Dominant market failure.

Table B1. Summary of additionality estimates at the sub-regional level

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
Deadweight	148	0.0	97.5	39.5	38.5	5.0
Displacement	158	0.0	80.0	21.5	12.0	3.6
Leakage	51	0.0	90.0	15.8	6.0	6.9
Substitution	37	0.0	100.0	2.7	0.0	5.4
Multiplier (not % in columns 2-5)	137	1.00	2.71	1.25	1.21	3.9
Net additionality ratio	74	0.0	152.9	45.8	47.0	6.8

Table B2. Summary of additionality estimates at the regional level

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
Deadweight	363	0.0	98.0	43.0	43.0	2.6
Displacement	367	0.0	100.0	29.6	25.0	2.7
Leakage	233	0.0	87.0	11.3	5.0	2.1
Substitution	192	0.0	87.5	3.4	0.0	2.2
Multiplier (not % in columns 2-5)	326	1.00	3.25	1.45	1.43	3.1
Net additionality ratio	226	0.0	189.0	50.3	48.8	3.8

Table B3. Additionality by primary theme. Means and +/- 95% confidence levels* at the sub-regional level

Themes	Deadweight	Displacement	Leakage	Substitution	Multipliers	Net additionality ratio
Business development & competitiveness	47.2 (5.6)	19.5 (3.9)	16.3 (8.2)	2.7 (5.4)	1.25 (3.7)	35.9 (13.3)
Regeneration through physical infrastructure	7.5 (3.9)	38.7 (6.7)	14.1 (9.3)	–	1.33 (9.9)	54.2 (6.2)
People and skills	26.3 (10.9)	17.9 (11.1)	13.5 (9.9)	–	1.66 (67.2)	54.0 (3.6)

** In brackets. Shaded areas denote results from less than 10 observations*

Table B4. Additionality by primary theme. Means and +/- 95% confidence levels* at the regional level

Themes	Deadweight	Displacement	Leakage	Substitution	Multipliers	Net additionality ratio
Business development & competitiveness	45.5 (3.3)	29.3 (3.3)	11.5 (3.1)	3.4 (2.2)	1.51 (4.3)	49.7 (6.1)
Regeneration through physical infrastructure	33.9 (5.4)	37.4 (6.7)	10.4 (3.5)	2.2 (3.8)	1.40 (5.9)	50.8 (5.2)
People and skills	39.4 (5.2)	24.7 (5.1)	14.2 (4.7)	4.4 (3.2)	1.36 (7.5)	55.1 (4.9)

** In brackets.*

Table B5. Additionality by programme v project. Means and +/- 95% confidence levels* at the sub-regional level

Themes	Deadweight	Displacement	Leakage	Substitution	Multipliers	Net additionality ratio
Programme	44.2 (5.5)	16.6 (4.4)	10.8 (3.8)	0.0 (–)	1.24 (3.1)	57.1 (6.3)
Project	36.1 (8.0)	25.0 (5.1)	17.0 (8.5)	2.8 (5.5)	1.26 (5.7)	27.1 (12.1)

** In brackets. Shaded areas denote results from less than 10 observations.*

Table B6. Additionality by programme v project. Means and +/- 95% confidence levels* at the regional level

Themes	Deadweight	Displacement	Leakage	Substitution	Multipliers	Net additionality ratio
Programme	43.8 (2.9)	26.2 (2.8)	11.5 (2.8)	5.8 (3.0)	1.40 (2.4)	54.8 (4.0)
Project	41.8 (4.8)	33.9 (5.0)	11.2 (3.3)	1.6 (1.7)	1.51 (6.3)	43.8 (7.0)

** In brackets.*

Table B7. Summary of additionality estimates at the sub-regional level for overall rationale – market failure/efficiency

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
Deadweight	15	6.7	96.7	45.3	33.5	15.1
Displacement	17	5.0	63.0	28.5	25.0	8.9
Leakage	1	15.0	15.0	15.0	15.0	–
Substitution	0					
Multiplier (not % in columns 2-5)	16	1.00	1.53	1.25	1.23	6.9
Net additionality ratio	2	135.0	152.9	144.0	144.0	24.8

Shaded areas denote results from less than 10 observations

Table B8. Summary of additionality estimates at the regional level for overall rationale – market failure/efficiency

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
Deadweight	114	0.0	98.0	40.1	40.0	4.5
Displacement	110	0.0	89.0	25.8	23.6	3.6
Leakage	98	0.0	87.0	13.8	5.0	3.4
Substitution	76	0.0	70.0	5.1	0.0	2.9
Multiplier (not % in columns 2-5)	109	1.00	1.93	1.40	1.39	3.6
Net additionality ratio	92	1.8	189.0	52.1	48.7	6.0

Table B9. Summary of additionality estimates at the sub-regional level for imperfect information market failure

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
Deadweight	7	6.7	96.7	53.2	43.0	29.3
Displacement	8	7.0	60.9	29.6	24.5	14.5
Leakage	0					
Substitution	0					
Multiplier (not % in columns 2-5)	7	1.09	1.41	1.26	1.24	7.6
Net additionality ratio	2	135.0	152.9	144.0	144.0	24.8

Shaded areas denote results from less than 10 observations

Table B10. Summary of additionality estimates at the regional level for imperfect information market failure

Additionality estimate	Number of observations (N)	Lower end of range %	Upper end of range %	Mean %	Median %	+/- at 95% Conf Level
Deadweight	91	0.0	98.0	36.9	33.0	5.0
Displacement	86	0.0	80.0	25.4	25.5	4.0
Leakage	74	0.0	66.0	15.2	10.0	3.8
Substitution	70	0.0	87.5	6.5	0.0	4.2
Multiplier (not % in columns 2-5)	82	1.00	1.93	1.41	1.39	4.4
Net additionality ratio	71	1.8	189.0	52.6	48.6	7.2

Shaded areas denote results from less than 10 observations

Annex C: Worked examples

Introduction

C1. The objective of this section is to show how the additionality evidence presented in this report can be used to benchmark findings that emerge from the evaluation of individual programmes across the three main themes of business development and competitiveness, regeneration through physical infrastructure and people and skills. The analysis presented is inevitably somewhat partial at the present time because of the difficulties of disaggregating the data further by different intervention characteristics. It has also been necessary to keep the description of the intervention examples to a minimum in order not to reveal their identity.

Business development and competitiveness

C2. Table C1 presents the results of an evaluation of an RDA business development programme designed to encourage business development and competitiveness. The programme is tasked to promote enterprise, encourage business start-ups and drive business growth. Financial support has been provided by the RDA supported by funding from the European Social Fund.

C3. The rationale for the projects supported under the programme has been founded on the need to tackle imperfect information and information asymmetries between entrepreneurs and investors/lenders. There has also been a strong equity argument as part of the programme has been designed to provide employment and support to particular disadvantaged or under-represented groups.

C4. The package has provided support for potential and actual entrepreneurs at all stages of the business journey from pre-starts and start-up through to established businesses with growth aspirations. There has been support for the development of a website; awareness raising events; networking events; training courses, as well as guidance on selling and franchising opportunities.

C5. Other components of the package have sought to assist SMEs in testing the commercial viability of new products and provided support to cover the costs of undertaking an assessment of market potential.

C6. Overall, there have been four components to the programme. Component 1 comprised a programme of business support to support people in enterprise. Component 2 has sought to reduce barriers to enterprise for disadvantaged groups in the labour market. Component 3 has been designed to help individuals to start businesses and enable SMEs to test the commercial viability of an innovative product or process. Component 4 had the intention of raising the awareness of the benefits of equity investment amongst potential and actual SMEs, encouraging them to formulate innovate proposals for investment. The total expenditure on all aspects of the programme amounted to around £5 million, with the RDA funding representing nine tenths of all funding.

C7. An evaluation of the programme was undertaken in 2008 and involved a review of key documentation including financial and output data as an extensive programme of interviews with project officers. A number of surveys were also undertaken amongst the beneficiaries of the programme using face-to-face, telephone and email surveys.

C8. Table C1 shows that the there was considerable variation in the deadweight associated with each of the individual components when assessed at the regional level. Thus, deadweight varied from a low of 41% to a high of 80%. The evaluation report for the programme discusses the factors that have been responsible for this variation. However, the evidence from the additionality database suggests that the overall average level of deadweight for programmes of this kind tends to be of the order of 45%, with a confidence interval of +/- 3.3% at the 95% level. The median value is around 50%. The benchmark thus tends to reinforce the view that Components 1 and 2 of the programme are rather extreme in their level of deadweight compared with initiatives of a similar kind. The implication of this is that the evaluator might wish to dig deeper to ascertain why the results appear to be so extreme and what the implications might be for the design of these programme components going forward.

C9. There is also considerable variation in the estimates of displacement at the regional level with a high of 64% under Component 1 and only 10% under Component 3. The benchmark average from the additionality database is 29.3% with +/- 3.3% at the 95% confidence levels. The median is 25% and only Component 4 of the subject intervention comes near to this benchmark average. Estimates of leakage and multipliers tend to be more consistent across components and more generally within the relevant confidence limits. There is more extreme variation at albeit a low level in the estimates of substitution.

Table C1: Additionality adjustments for Business Development and Competitiveness Projects at the regional level % (except for multiplier)

Additionality variables	Component 1	Component 2	Component 3	Component 4	CEA study Business development & competitiveness theme		
					Mean	Median	Further detail
Deadweight	60.0	58.0	41.0	80.0	45.5	50.0	See Table 2.2
Leakage	10.0	10.0	5.0	10.0	11.5	3.0	See Table 4.2
Displacement	54.0	64.0	10.0	27.0	29.3	25.0	See Table 3.2
Substitution	11.0	2.0	5.0	10.0	3.4	0.0	See Table 5.2
Multiplier effects	1.6 (not percent)	1.4	1.6	1.4	1.51	1.50	See Table 6.2

Source RDA Report 2008

People and skills

C10. Table C2 presents estimates for a programme under the people and skills theme which has concentrated its expenditure extensively on labour market and training related issues. The focus of this example has been on overcoming market failures particularly in the labour market and the provision of training that was critical to companies rather then relying on 'off the shelf' packages that did not meet the needs of small businesses.

C11. The four elements to the programme sought to: address potential barriers to tackle skills needs and gaps in the manufacturing sector to improve competitiveness and productivity; introduce a demand led training initiative for SMEs; equip the workforce with high level skills with particular emphasis on administration and management skills; and concentrate on the seven key sectors identified in the Regional Economic Strategy to help the growth of the regional economy.

C12. Expenditure on the programme amounted to some £5.2 million over six years. Two elements were delivered by a university within the region which managed and administered some of the programme and established a steering group and sub-group to form a selection panel appraising submissions from SMEs. Other elements were run by a programme manager contracted by the local authority and involved a local college in training delivery. The final element was managed by the accountable body in association with a second university to deliver the project across the entire region.

C13. An extensive and comprehensive evaluation was undertaken involving interviews with key stakeholders and providers involved in each element of the programme as well as a wide-ranging survey of business beneficiaries.

C14. Table C2 shows a deadweight estimate for all elements of the programme at 43% which looks quite close to the additionality study benchmark of 39.4%. Leakage emerges much lower than the benchmark, even taking account of the margin of error at the 95% confidence level, whereas displacement is much higher at 49% compared with the benchmark average of 25% (which, based on the margin of error, would not be expected to be higher than 30%). Substitution and the multiplier effects are more in line with the average.

Table C2: Additionality adjustments for Workforce development at the regional level % (except for multiplier)

Additionality variables	People and skills programme	CEA study People and skills theme		
		Mean	Median	Further detail
Deadweight	43.0	39.4	35.5	See Table 2.2
Leakage	3.0	14.2	8.0	See Table 4.2
Displacement	49.0	24.7	20.0	See Table 3.2
Substitution	1.0	4.4	0.0	See Table 5.2
Multiplier effects	1.4	1.36	1.30	See Table 6.2

Source RDA Report 2008

Regeneration through physical infrastructure

C15. An example of a programme under the theme of regeneration through physical infrastructure is provided by an area regeneration initiative undertaken by a Regional Development Agency targeted on four different parts of the region. In each case the RDA's funding supported the capital costs of area regeneration as a means of addressing economic and social problems.

C16. Project 1 provided public realm enhancements to a popular visitor destination combined with support for a heritage initiative. The RDA has provided approximately £8 million, which is approximately half of the total project costs. The project was part of the RDA's initiatives to deliver high quality places to live, work and visit. Project 2 concentrated on the comprehensive redevelopment of a contaminated site of significant strategic importance for the development of a different town centre and has sought to provide housing and employment space. It tackled market failures in land markets. Project 3 was a brownfield site project that encompassed extensive remediation and redevelopment of a strategically important site in the encouragement of new economic development in a different part of the region. Project 4 has concentrated on a number of environmental and transport initiatives that have been designed to facilitate economic benefits for the local area, particularly tourist related.

C17. Evaluations were undertaken of the projects drawing upon a review of project documentation, consultations with a range of partners and other stakeholders, an analysis of secondary data indicators and analysis of project monitoring data from project management systems on expenditure and outputs.

C18. Table C3 presents the findings from the subject evaluation work that has estimated the relevant additionality parameters at the local sub-regional and regional level. The evidence suggests that deadweight at both the sub-regional and regional level tends to vary quite significantly across the four projects in question, ranging from zero deadweight as a minimum and 35% at the maximum.

C19. The additionality database assembled for this study has a benchmark mean deadweight at the sub-regional level of 7.5% but the confidence limits are +/- 3.5% around this indicating the wide variation across programmes. The median is 0%, indicating that most observations have values lower than the mean. At the regional level the benchmark mean deadweight is 33.9 +/- 5.4%, with a median of 33.9%.

C20. On the basis of these results, we can see that Project 1 is much more like the benchmark average at the sub-regional level, whilst Project 4 is more like the benchmark average at the regional level.

C21. With regard to displacement, all of the projects seem to have relatively low displacement compared with the benchmark average at the sub-regional level. However, at the regional level two of the projects are some way out of line, either being much higher or much lower than the benchmark average.

C22. Leakage estimates tend to vary between 0 and 25% at the sub-regional level compared with the benchmark average of 14.1% which does, however, have very large confidence limits of +/-9.3 %, and a median of 10%. At the regional level the leakage is relatively low compared with the benchmark average of 10% +/- 3.5% and a median of 5%. As might be expected given their nature, none of the projects had estimates for possible substitution effects. The multiplier estimates appeared to be within the confidence intervals of the additionality database mean value.

Table C3.: Additionality adjustments for jobs generated by projects associated with Regeneration through Physical Infrastructure % (except for multiplier)

Additionality variables	Project 1		Project 2		Project 3		Project 4		CEA Regeneration through physical infrastructure theme					
	Local	Regional	Local	Regional	Local	Regional	Local	Regional	Mean	Local Median	+/- at 95% Conf Level	Mean	Regional Median	Further detail
Deadweight	10.0	10.0	0.0	0.0	0.0	0.0	35.0	35.0	7.5	0.0	3.9	33.9	35.0	See Table 2.2
Leakage	15.0	5.0	15.0	2.0	25.0	5.0	15.0	0.0	14.1	10.0	9.3	10.4	5.0	See Table 4.2
Displacement	0.0	66.0	10.0	15.0	25.0	40.0	0.0	47.0	38.7	37.0	6.7	37.4	29.0	See Table 3.2
Substitution	Na	Na	Na	Na	Na	Na	Na	Na				2.2	0.0	See Table 5.2
Multiplier effects	1.21	1.38	1.29	1.44	1.25	1.41	1.21	1.38	1.33	1.32	9.9	1.40	1.39	See Table 6.2

Source RDA Report 2008

Annex D: Glossary of key terms

Additionality	The situation in which a firm substitutes one activity for a similar activity (such as recruiting a different job applicant) to take advantage of government assistance.
Appraisal	The process of defining objectives, examining options and weighing up the costs benefits, risks and uncertainties.
Crowding out	The extent to which an increase in demand occasioned by government policy is offset by a decrease in private sector demand.
Deadweight	The proportion of total outputs/outcomes that would have been secured anyway (sometimes referred to as non-additionality).
Displacement	The degree to which an increase in productive capacity promoted by government policy is offset by reductions in productive capacity elsewhere.
Externalities (negative and positive)	Externalities occur when an individual's actions or behaviour directly impacts on others' welfare and the individual does not take these spillover effects into account because they are not included in market prices. This leads to overprovision and/or over consumption if they are negative or under provision and/or under consumption if they are positive. Examples of positive externalities include R&D. Examples of negative externalities include air, noise and water pollution; and crime.
Evaluation	Retrospective analysis of a project, programme or policy to assess how successful or otherwise it has been, and what lessons can be learnt for the future. The terms "policy evaluation" and "post-project evaluation" are often used to describe evaluation in those two areas.
Intervention	Project, programme or policy implemented or supported by the public sector to achieve its objectives
Leakage	The proportion of outputs that benefit those outside the intervention's target area or group.

Imperfect competition Imperfect competition arises when one or more firms have some degree of market power. In the extreme, market structure is characterised by perfect competition and monopoly. In reality though, most markets tend to fall in between these two extremes. The most common example of imperfect competition is the concentration of market power in the hand of a few large providers (i.e. oligopolistic markets). In oligopolistic markets, there may be incentives for firms to restrict production – through deliberate or tacit collusion – thereby leading to a suboptimal level of production from society's viewpoint.

Imperfect information Imperfect information arises where individuals are not perfectly 'informed' about the options available to them and the costs and consequences of their decision-making. Individuals are therefore unlikely to assess correctly the costs and benefits to themselves of their actions, leading to suboptimal choices.

Information asymmetry (or Asymmetric information). Asymmetric information describes the situation where one party to a transaction is better informed than the other. In the standard economic model, all parties (e.g. buyers and sellers) are perfectly informed about the costs and benefits of all their possible actions and choices. In reality, however, it is often the case that one party has better information than the other.

Market power see Imperfect competition.

Market failure An imperfection in the market mechanism which means that the market has not and cannot deliver an efficient allocation of resources.

Multiplier effect Further economic activity (jobs, expenditure or income) associated with additional local income and local supplier purchases.

Non-excludability The inability to exclude someone from benefiting from a good once it has been provided. The classic example is street lighting, once this has been provided by one agent, all agents can benefit from it. Non-excludability is a defining characteristic of a pure public good.

Non-rivalry The situation where the usage of a good by one individual does not diminish another individual's ability to consume the good. The classic example is air. Non-rivalry is a defining characteristic of a pure public good.

Outcomes	The eventual effect on economic, social or environmental conditions that an intervention achieves.
Outputs	The physical products or measurable results of projects or programmes.
Programme	A group of projects and activities that are coordinated and managed as a unit such that they achieve outcomes and realise benefits.
Project	A unique set of coordinated activities with definite starting and finishing points undertaken by an individual or team, to meet specific objectives with defined time, cost and performance parameters.
Public good	"Pure" public goods are said to be non-rival and non-excludable (see definitions above). In practice, most public goods exhibit some degree of non-rivalry and/or non-excludability. In general, these goods are under-provided by the market. Examples are the benefits arising from criminal justice, national defence and clean air.
Substitution	The situation in which a firm substitutes one activity for a similar activity (such as recruiting a different job applicant) to take advantage of government assistance.
Target area	The spatial area within which benefits will be assessed.

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